

The

CONSTRUCTOR

OFFICIAL PUBLICATION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA



Volume XXXV

AUGUST 1953

Number 8

● BUILDINGS

● HIGHWAYS

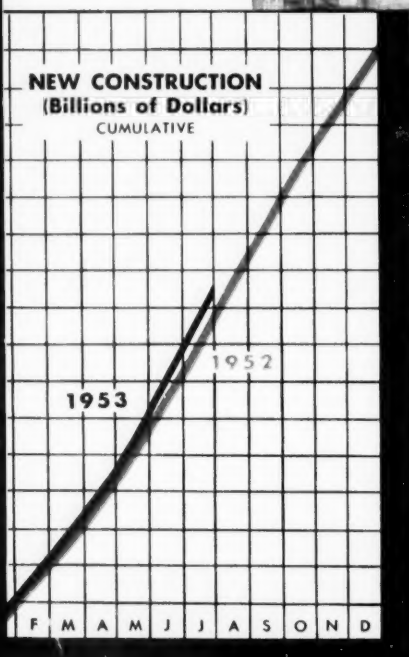
● AIRPORTS

● RAILROADS

● PUBLIC WORKS



NEW CONSTRUCTION
(Billions of Dollars)
CUMULATIVE



New Construction Volume 8% Above 1952-21
Competition Control Hit by Antitrust Law-22
New Congress Appropriates \$62 Billion-25

you've got to

Swing that Rear-End

for **TOP** performance



Windrows large enough to stall the average motor grader, or cause its front end to slide sideways, are handled easily by the A-W Power Grader. Rear steer has the rear wheels *pushing* behind the toe of the blade while the powerful front drivers *pull* ahead of the heel. We call it "Controlled Traction" and it moves more of any kind of material, farther and faster than would otherwise be possible.

On job after job, right straight through the year, All-Wheel Steer simplifies and speeds things up for the operator... does more work and better work... saves time and money. No two ways about it... you've got to SWING THAT REAR-END for *top* performance.

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GRADING
SLOPES



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Sure-Grip, All-Weather-T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

THE pattern of these clean-cut, *deep-gripping* treads shows how Goodyear's famous Sure-Grip off-the-road tires provide sure-footed traction that keeps loads rolling on schedule.

It takes long experience to build tires that can stand up to any job—and save you time and money—but Goodyear has what it takes. Goodyear has built over 575 MILLION pneumatic vehicle tires—more

tires for more uses than anyone else on earth—and out of that tremendous practical experience come the continuous cost-saving improvements, the rugged *working* qualities, that can mean so much to you. So pin your faith on Goodyears for every wheel on the job—and see what your equipment can really do! Goodyear, Truck Tire Department, Akron 16, Ohio.



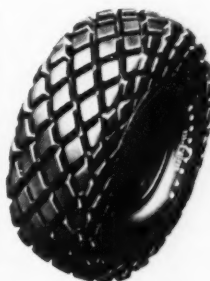
**You can't beat the
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for drive-wheel traction on graders and pans.



**You can't beat the
HARD ROCK LUG**

for rocky terrain and all kinds of tire-killing work.



**You can't beat the
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MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND
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THE CONSTRUCTOR, AUGUST 1953



169,000 Sq. Ft. of Precast 'Incor' Concrete Wall Panels in New Grumman Aircraft Plant

● A sixth Grumman Aircraft plant is being built on a 4700-acre site, on eastern Long Island. The accent is on speed with economy, through the use of 169,000 sq. ft. of precast insulated wall panels, in a complete wall system which is fire-safe, durable, weather-resistant—2500 sq. ft. erected per 7-hour day, with one crane and crew—6 sq. ft. a minute!

Cost is less than usual masonry construction. Size and texture of units give architectural effect and appearance considered by many as superior to high quality cut-stone. Highly-mechanized casting operation gets utmost production speed by using 'INCOR'* 24-HOUR CEMENT. Panels are lifted 18 to 24 hours after casting, placed in curing room for 2 days, then stored in yard. Dependable 'Incor' high early strength assures clock-like schedules.

Another demonstration of assembly-line methods applied to construction—a potential of great significance in the light of today's building costs.

*Reg. U.S. Pat. Off.

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Peconic River Plant, Calverton, L.I.

Supervision: **DEPT. OF THE NAVY, BUREAU OF YARDS AND DOCKS**

Architects-Engineers:

OFFICE OF ALFRED EASTON POOR • SEELYE, STEVENSON, VALUE & KNECHT

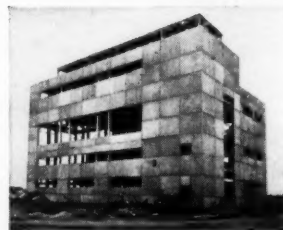
General Contractors:

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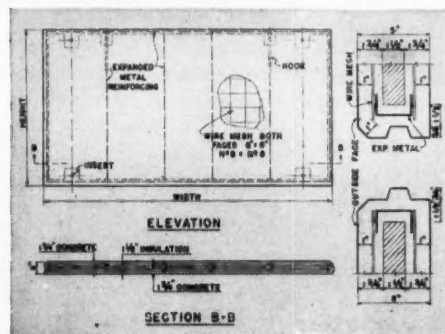
Precast Concrete Wall Panels:

PRECAST BUILDING SECTIONS, INC., New Hyde Park, L.I.

in association with: **MARIETTA CONCRETE CORPORATION, Marietta, Ohio**



Size, texture and quality of panels produces appearance considered by many as superior to high-quality cut-stone—cost is less than usual masonry construction. Above, wall of main building; left, power plant. Panel detail, below.



LONE STAR CEMENTS COVER
THE ENTIRE CONSTRUCTION FIELD

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CEMENT PRODUCERS: 18 MODERN MILLS, 129,000,000 SACKS ANNUAL CAPACITY

The CONSTRUCTOR

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COVER

Steel skeleton of an \$11-million elevated highway link extends southward under Manhattan and Brooklyn bridges as a part of an express dual highway planned to encircle Manhattan Island, New York. City officials praised work of Bethlehem and other contractors. (See Page 43)

The Official Publication of The Associated General Contractors of America, Inc.

Published monthly. Editorial and Executive Office, Munsey Building, Washington 4, D. C. Subscription price \$5.00 per year. 40¢ per copy (July \$2.00). Re-entered as second class matter June 10, 1949, at the Postoffice at Washington, D. C., under the Act of March 4, 1879. Copyright 1953 by The Constructor, Inc.

THE CONSTRUCTOR, AUGUST 1953



Seawall under construction at Galveston, Texas



JOB-ENGINEERED FINANCE PLANS



Trotti & Thomson, Inc., of Beaumont, Texas, help fight the inroads of the Gulf of Mexico by building the new 16' high Galveston Seawall Extension. Job details: a \$2½ million contract involving 40,600 yards of poured concrete and the removal of 400,000 yards of Gulf mud.

C.I.T. Corporation financed the equipment in the picture for Trotti & Thomson, the most recent of a long series of financing

transactions worked out by C.I.T. for Trotti & Thomson's operating and equipment needs.

Does *your* current work schedule show the need for capital loans or equipment financing? You can solve this problem fast by phoning or writing any one of the offices listed below. C.I.T. representatives talk your language and know the construction equipment financing business. A call or a letter will bring fast assistance.

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New construction expenditures for July rose to \$3.3 billion, a new monthly peak, which was 8% over the same period for last year, the Bureau of Labor Statistics and Department of Commerce announced this month. Small increase over the previous month's estimate was due largely to gains in highway construction and private outlays for public utilities. Total amount for new construction put into place first seven months of year estimated at \$19.3 billion or gain of 8% over last year. (Page 21)

Appropriations totalled about \$62 billion as 1st session of 83rd Congress drew to a fast finish, but were some \$13 billion below recommendations of previous Administration. Most construction appropriations were slashed below original requests, federal aid for airports lost out, but a federal school construction program for crowded areas won a surprising revival in final day. (Page 25)

Failure of Congress to accede to President Eisenhower's request to hike public debt limit posed threat of special fall session. Several other major problems remained to be solved in next session, including taxes, Taft-Hartley law revision, and social security. For construction, S. 24, passed by the Senate to provide judicial review of disputes arising from government contracts, carries over to next session, when House Judiciary Committee plans early hearings which should lead to House action. (Pages 25, 26)

Governors' Conference, which convened in Seattle this month, sought help from President Eisenhower to sell Congress on program to make states less dependent on federal aid. Republican governors, in general, gave informal support to President's most controversial domestic policies, including taxes and increase of the national debt limit.

Construction of Spanish bases for Air Force expected to begin soon as bilateral agreements are worked out. Air Force estimated at recent secret sessions of Senate Appropriations Committee that the four bases would cost \$160 million. The committee inserted a provision in a supplemental money bill to allow work to start on Spanish and other classified bases.

New appointments to NLRB last month were accepted with general feeling of optimism by construction management that changes will lead to more efficient administration of the board's functions in the future. New chairman promises to emphasize an "even-handed application" of Taft-Hartley Act. (Page 24)

Four top Labor Department jobs were filled last month by the Administration, with the naming of three assistant secretaries and a solicitor. Also, the new head of the Federal Mediation and Conciliation Service was confirmed. (Page 24)

Antitrust legislation poses major pitfall for those who would attempt to control competition in construction industry, latest case involving Chattanooga special trade contractors illustrates. (Page 22)

New Assistant Secretary of Defense Franklin G. Floete, former contracting firm head, took office early this month to supervise and coordinate all construction performed by the armed services. New position assumed by Mr. Floete is part of reorganization of Defense Department which created six new assistant secretary positions. Work of new office absorbs functions of Director of Installations exercised since last August by Frank R. Creedon. (Page 21)

New commissioner of Bureau of Reclamation, Wilbur A. Deixheimer, took office last month, after prior recommendation of Interior Secretary McKay for appointment of Marvin Nichols, Texas engineer, backfired at the White House. Mr. Deixheimer is career officer in the bureau since 1928, except for brief service in World War II and with construction firm. (Page 40)

Building Research Advisory Board completed two-year study on conservation in construction industry June 30 and called for "building science" to bring together the industry's widely spread technologies. (Page 32)

Cost of living for month ending June 15 set new all-time high of 114.5, Bureau of Labor Statistics reports. Increase of 0.5% over previous month tops former high of last August by 0.2%, and pre-Korean prices by 12.5%. (Page 13)

Hourly wage scales of union construction trades workers rose 2.6% in second quarter of year, Bureau of Labor Statistics reports in survey of 7 major building trades in 85 cities across nation. Carpenters, painters, and building laborers accounted for three-fourths of workers whose wages were increased to average of \$2.69. Rise of wages reflects the up-turn in Spring construction.

A.G.C. of Western Kentucky was chartered as 122nd chapter of the association in Paducah, July 16. National President C. P. Street presented charter to Chapter President John P. Kerr. (Page 56)

President Eisenhower in June called on Labor Secretary Durkin to "intensify" work of the President's Conference on Occupational Safety and help reduce the rate of accidents in the nation's workplaces. The President called annual toll of 15,000 deaths and 2 million injuries in industry "an economic and social waste." (Page 54)

Governing and Advisory Boards of the A.G.C. will hold their mid-year meeting in Chicago, Sept. 14-15, at the Edgewater Beach Hotel. These leaders of the industry will study the present demand for construction which reflects as the main area of expansion civilian production rather than defense production. (Page 22)

Work stoppages in June totalled 725 and idled 400,000 workers compared with 750 strikes involving 370,000 workers the previous month. Four largest strikes, involving 10,000 or more workers, were all in the construction industry. Included among these was a 14-day walkout at the Atomic Energy Commission's much-struck Paducah, Ky., project, Labor Department reports.

Construction statistical machinery of the government is finally receiving attention after steady deterioration while being subjected to severe personnel losses during the period of dismantling government controls. Construction industry representatives have strongly urged permanent re-establishment in the Commerce Department of its Construction Division, which was moved under the National Production Authority to exercise controls during the Korean conflict.



NEW PHOENIX LIBRARY features full floor-to-roof sweep of TRUSCON STEEL WINDOWS



Public Library, Phoenix, Arizona
 Architects: Lescher and Mahoney, Phoenix, Arizona
 Contractor: T. G. K. Construction Company

The reading room of this new public building is brilliantly daylighted through a wall of Truscon Fixed Intermediate Steel Windows. Sweeping upward two full stories, these Truscon windows reach from ground floor to roof to capture the Arizona sun.

Here, Truscon Intermediate Steel Windows are creatively applied to achieve contemporary design, superior lighting and long-lasting utility. Truscon makes the windows that help inspire creative construction ideas. Architectural imagination—plus the extreme versatility made possible by Truscon's unmatched choice of window types and sizes—combine to inspire beautiful and functional structures. See details on all Truscon Metal Windows in Sweet's; or, write "window headquarters" for latest literature.



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A Series of Graphs Outlining the Construction Trend

Compiled by The Associated General Contractors of America

TREND OF CONSTRUCTION COSTS

The average of construction costs in the principal construction centers of the United States for July stands at Index Number 411, according to the A.G.C. Index. The cost figure for July 1952 was 391. The 1913 average equals 100.

WAGE AND MATERIAL PRICE TRENDS

The average of wages in the principal construction centers of the United States stands at 575 for July. One year ago the average stood at 542. The average prices paid by contractors for basic construction materials for July stand at Index

Number 303. The average a year ago stood at 291. The 1913 average, again, equals 100.

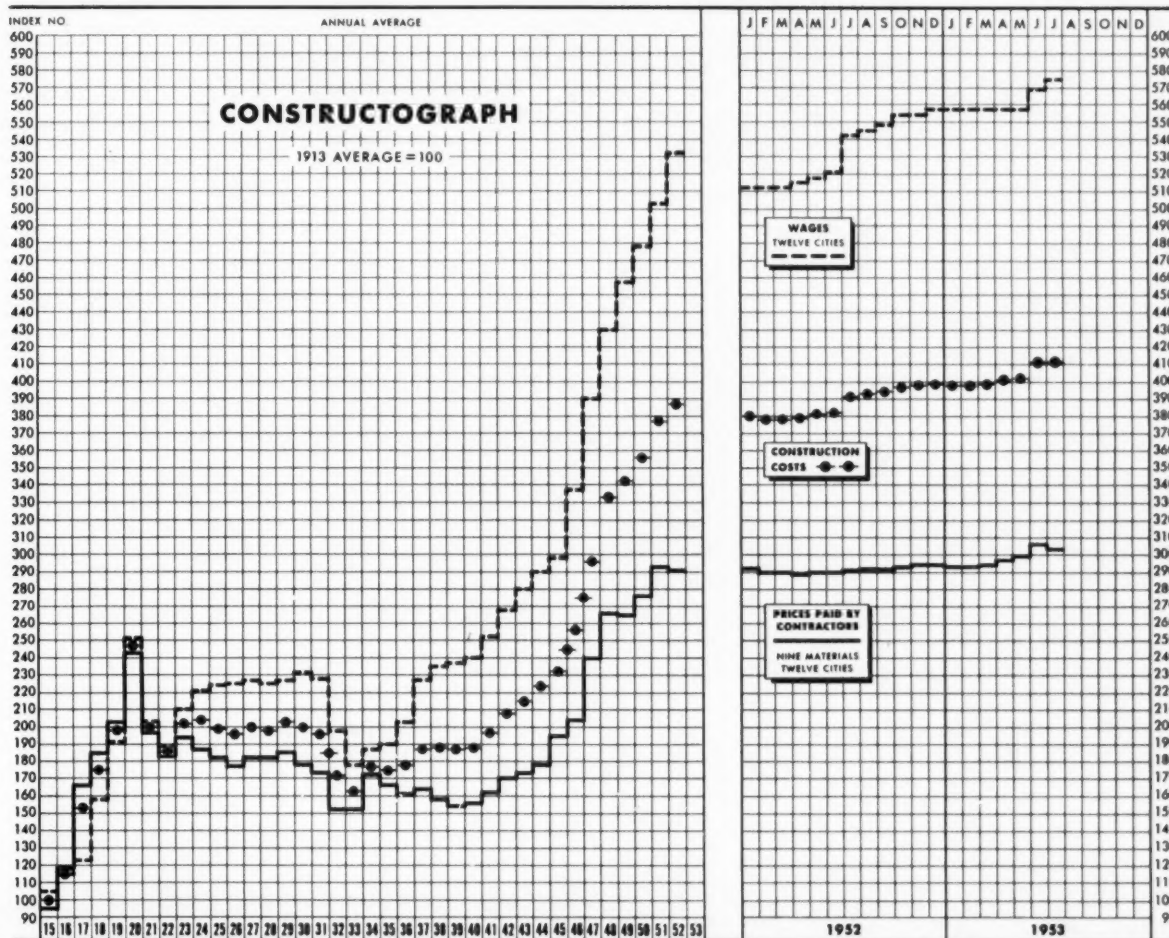
CONTRACT AWARDS IN 37 STATES

The volume of contracts awarded during June (Index Number 295, based on 1936-38) is a decrease of 98 points from May and a decrease of 91 points from June 1952. (F. W. Dodge Corp.)

REVENUE FREIGHT LOADINGS

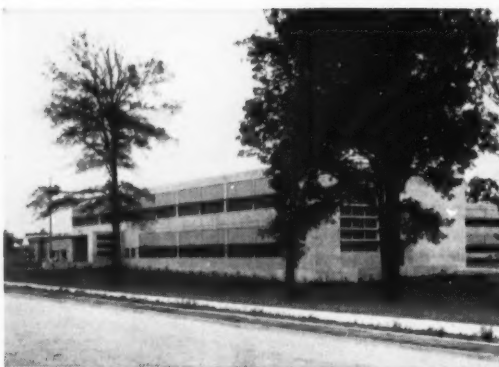
Revenue freight loaded during the first 29 weeks of 1953 totaled 21,111,726 cars. For the same period in 1952, loadings amounted to 20,164,803 cars. This represents an increase of 4.6%.

Wage, Material Price and Construction Cost Trends



Mr. Henry O. Pommer, Vice President of
John A. Denie's Sons Company, Memphis, agrees:

**"...controlled concrete
calls for adding air entraining
agent at the mixer!"**



At left, Sherwood School; ready mixed concrete furnished by Denie's Sons Company for the Harmon Construction Company, Contractor.

Like many leading producers of ready-mixed and block concrete, the John A. Denie's Sons Company of Memphis, Tennessee, is called upon to deliver concrete for a variety of construction.

In order to "tailor-make" concrete that's best for each particular job, Mr. Henry O. Pommer, Vice President in charge of Operations, has for many years utilized the outstanding benefits of air entrainment. But Mr. Pommer has also learned that many factors, in addition to the amount of air entraining agent in cement, control the amount of air actually entrained in his concrete—and be-

cause the scope of Denie's Sons operations often requires the use of as many as twelve different aggregates, Mr. Pommer knows . . . *"necessary control would be impossible if we did not add the required amount of air entraining agent at mixer!"*

So on your next air entrained concrete job, remember—safe, sure control is easy . . . by following "prescription" technique!

★ ★ ★

If you have any problems or questions on the use and mixing of air-entrained concrete, a Marquette Service Engineer will be glad to help and advise you—contact any Marquette office.

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SALES OFFICES: Chicago • St. Louis • Memphis • Jackson, Miss. • **PLANTS:** Oglesby, Ill.
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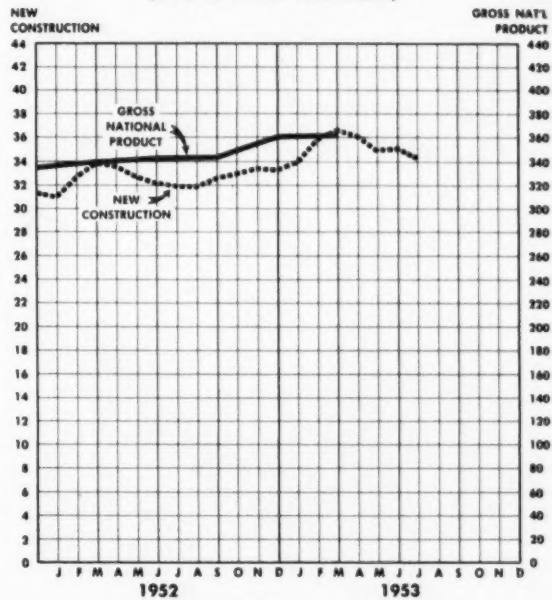
PORTLAND • HIGH EARLY STRENGTH • AIR ENTRAINING • MASONRY



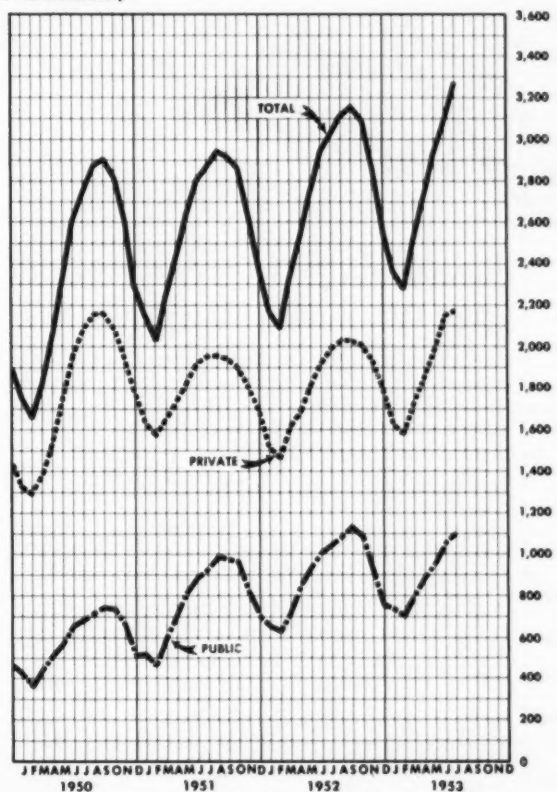
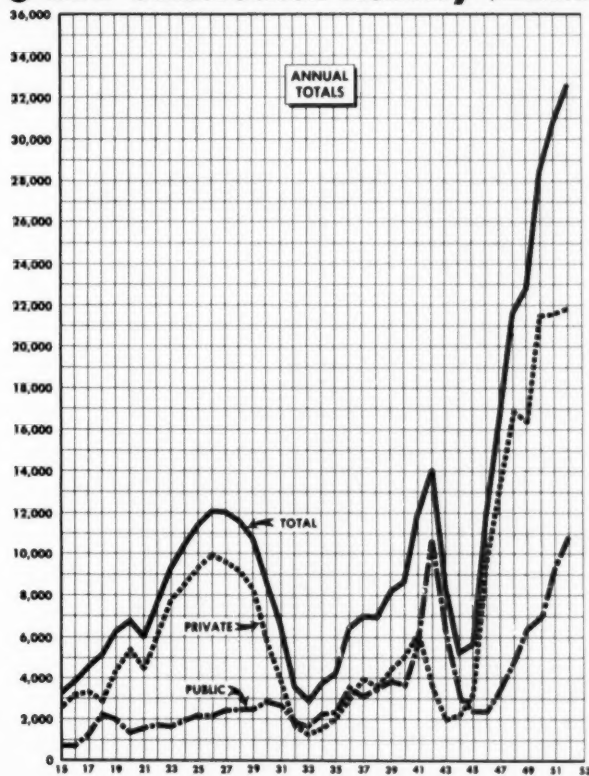
● **TOTAL Construction Compared with Gross National Product**
(BILLIONS OF DOLLARS)



● **NEW Construction Compared with Gross National Product***
(BILLIONS OF DOLLARS)



● **New Construction Activity** (MILLIONS OF DOLLARS)



DATA SUPPLIED BY DEPTS. OF COMMERCE AND LABOR



Action

PROVES

COMPARE *these* FEATURES
IN THE 1-YD. CLASS...

When you need a 1-yd. class machine, we ask only this — see the *Lorain-50* in action before you buy!

Compare a Lorain-50 shovel *in action* with any other make. Compare design features and what they do for you, and you'll see why your investment in a Lorain will pay off.

See how the smooth-acting *Hydraulic Coupling* cushions shocks and impacts, eliminates stalling under any digging conditions, contributes greatly to longer life. See how *air controls* make the operator's job easy and add extra yards to daily output. See how the *selection of 4 crawlers* — standard, extra-long, extra-wide, and extra-long & extra-wide — can match ground and working conditions for your maximum



FEATURES

output. See how *Center Drive* turntable construction transmits power in the most direct line to cables and dipper teeth. See how easy it is to change to any one of *5 front ends* to enable you to bid most any contract.

These, plus many other features, make up the famous Lorain "*balanced quality*" throughout the machine. For best proof of Lorain-50 features, see one *in action*!

Your near-by Thew-Lorain Distributor wants to show you a Lorain-50 in action — point out to you the many advantages that will be yours when you bid your future jobs on the basis of Lorain-50 performance. He is close to you. Call him now!

THE THEW SHOVEL CO., LORAIN, OHIO

ASK YOUR DISTRIBUTOR TO SHOW YOU A

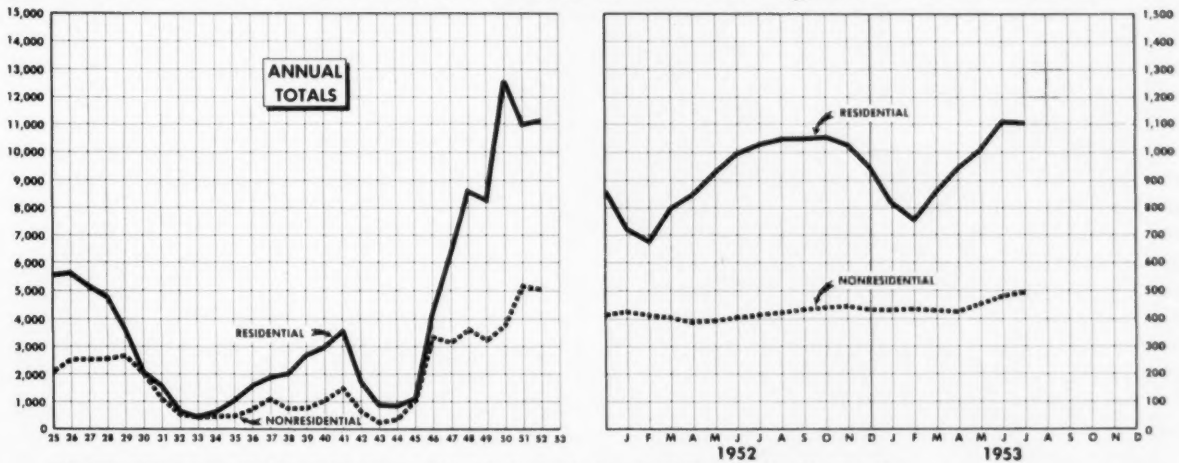
THEW
LORAIN



IN ACTION

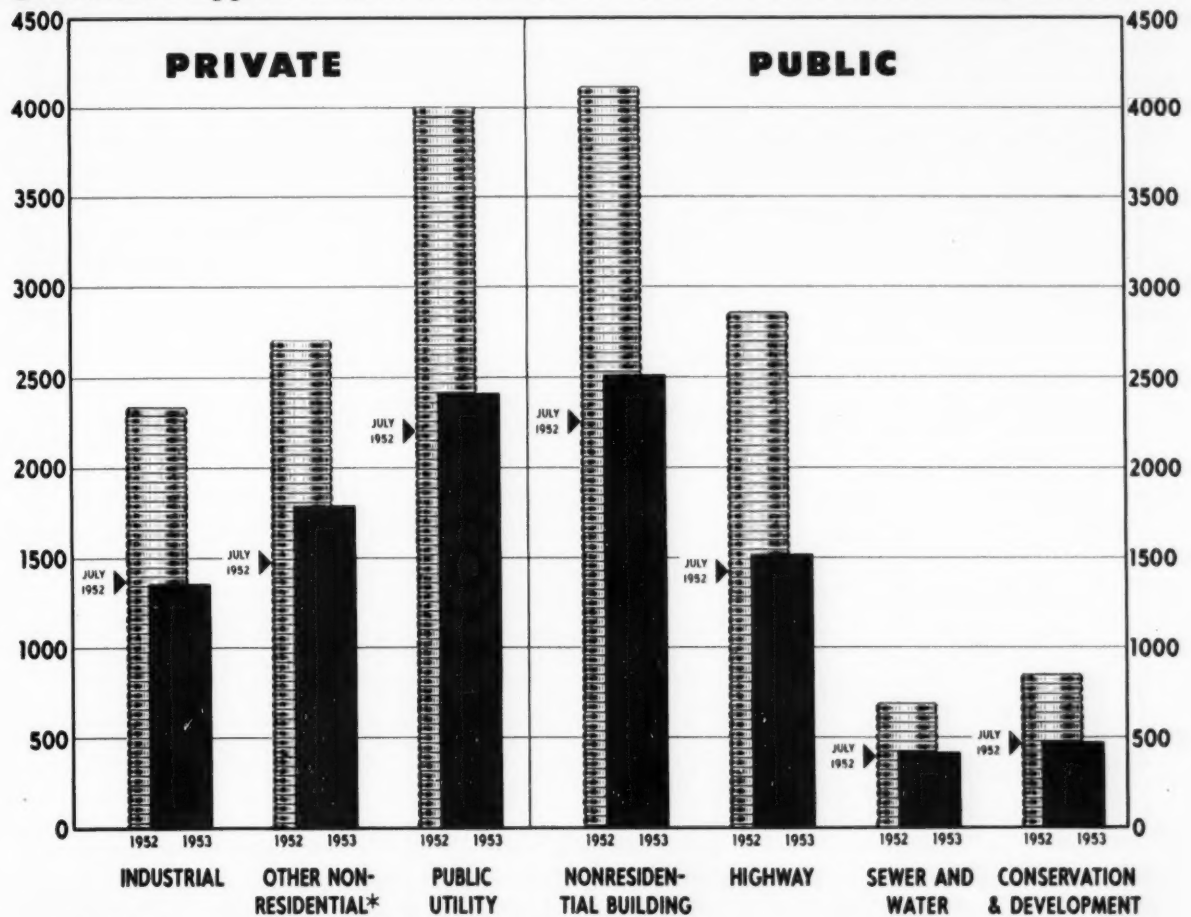
NEW CONSTRUCTION ACTIVITY

● Private Residential and Nonresidential Building * (MILLIONS OF DOLLARS)



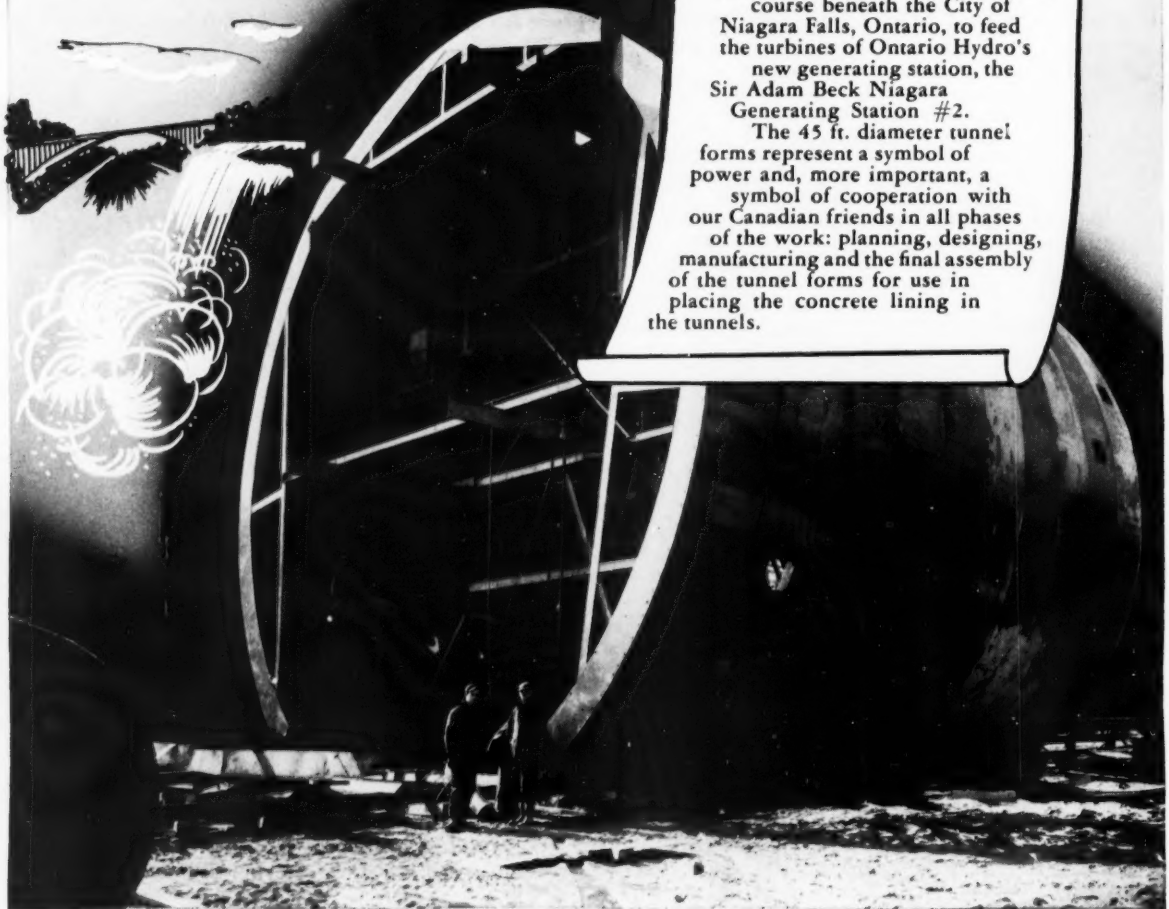
* Residential excludes farm; Nonresidential includes industrial, commercial, institutional, and social and recreational building, but excludes public utility building.

● Selected Types: (CUMULATIVE, MILLIONS OF DOLLARS) 1952, 1953 VOLUME THROUGH JULY



* Includes commercial, institutional, and social and recreational building.

*Blaw-Knox Steel Forms help build
the biggest long tunnels and
the longest big tunnels
in the world!*



They're Blaw-Knox Steel Forms, of course, for the gigantic twin tunnel project to convey Niagara River water on a five mile course beneath the City of Niagara Falls, Ontario, to feed the turbines of Ontario Hydro's new generating station, the Sir Adam Beck Niagara Generating Station #2.

The 45 ft. diameter tunnel forms represent a symbol of power and, more important, a symbol of cooperation with our Canadian friends in all phases of the work: planning, designing, manufacturing and the final assembly of the tunnel forms for use in placing the concrete lining in the tunnels.

.... for every concrete placing job use

BLAW-KNOX STEEL FORMS!

WHATEVER your concreting job . . . big tunnels, dams, bridges, or concrete installations of any kind . . . follow the lead of the builders of the Sir Adam Beck Niagara project. Call in Blaw-Knox engineers for the expert consultation service that assures efficient forming methods and results in close scheduling and fast progress in the concrete placing.

Blaw-Knox engineers, with over 40 years experience in solving tough or unusual concreting problems, get right to the heart of your problem, find the simplest, most economical method of solving it, and recommend the Blaw-Knox Steel Forms best suited for the job.

Get complete details today about the advantages of Blaw-Knox consultation service in the *preliminary* planning stage. Send for Bulletin 2035 today, or if you want detailed information fast, wire or phone.

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BLAW-KNOX

For Moderate Income Families in Large Cities

(Formerly referred to as the "Cost of Living Index," compiled by the Bureau of Labor Statistics)

Cost of living for month ending June 15 set a new all-time high of 114.5, the Bureau of Labor Statistics reports.

A 1.4% rise in retail food prices edged Consumer Price Index up from 114 in mid-May to 0.2% above the former high set in August of last year and equalled in November. This rise wiped out most of the decline in prices registered earlier in year. Pork prices, which continued to lead upward trend, rose 6% in June. They had already risen 7% in May.

The bureau reported the latest index at 1% higher than last June and 12.5% above pre-Korean prices.

Besides food, the costs of housing, medical care and other goods and services increased slightly. Apparel, personal care and reading and recreation showed slight declines and average transportation cost remained unchanged for the month.

This change in the index means a slight increase in the wages of approximately 3.5 million union workers, mostly in the automobile and railroad industries, who have their wages tied to the cost of living.

The Consumer Price Index, formerly calculated on the base 1935-39=100, was converted beginning January to the new base 1947-49=100 in compliance with recommendations of the Bureau of the Budget.

A portion of this index below indicates the average changes in retail prices of selected goods, rents and services bought by the average family of moderate income from April 15, 1951 to June 15, 1953.

They are represented here for use by employers who may wish to take these cost of living data into consideration when contemplating adjustments of wages based on increased living costs.

Aside from the change of the base years, the revised index includes prices of about 300 items, compared to some 200 for the previous index. The "weight" assigned to items is now based on facts concerning family expenditures of wage earners and clerical workers found in a survey on consumer expenditures conducted by the bureau.

The first five cities in the table below are checked and reported on monthly. The other 15 cities are surveyed and their indexes published quarterly.

	1951			1952			1953		
	APR.	MAY	JUNE	APR.	MAY	JUNE	APR.	MAY	JUNE
Average.....	110.4	110.9	110.8	112.4	113.0	113.4	113.7	114.0	114.5
New York, N. Y.....	109.1	109.6	109.1	110.9	110.7	110.9	111.1	111.4	112.0
Chicago, Ill.....	111.1	111.5	111.6	113.4	114.3	114.9	114.2	114.6	115.3
Los Angeles, Calif.....	111.1	111.5	111.4	114.6	114.5	114.8	115.6	115.3	115.4
Philadelphia, Pa.....	111.7	112.0	111.5	113.1	113.2	113.6	113.7	113.8	114.6
Detroit, Mich.....	110.6	111.0	111.6	113.6	113.6	113.9	115.2	115.8	116.6
Atlanta, Ga.....		113.6			114.6				117.1
Baltimore, Md.....			110.4			113.0			115.1
Boston, Mass.....	109.0	109.4	109.6	111.1	111.7	112.0	111.7		
Cincinnati, Ohio.....	109.6	109.7	109.9	111.9	112.5	112.9			114.5
Cleveland, Ohio.....		110.4			113.1			113.7	
Houston, Texas.....	113.7	113.7	113.6	115.0	114.8	114.9		116.8	
Kansas City, Mo.....	110.9			113.9			114.3		
Minneapolis, Minn.....			110.9			114.9	115.1		
Pittsburgh, Pa.....	109.8	110.5	110.5	112.3	112.4	112.2	112.8		
Portland, Ore.....	112.1			114.7			115.4		
St. Louis, Mo.....			110.8			115.5			115.8
San Francisco, Calif.....			110.2			114.9			116.1
Scranton, Pa.....		109.7			112.1			112.0	
Seattle, Wash.....		112.0			114.6			116.2	
Washington, D. C.....		109.6			112.6			113.5	

TOURNATRACTORS

outproduce crawlers despite double haul distance

**Tournatractor-scrapers move 1839 station yards hourly,
crawler-scrapers 687, on Iowa highway job**



Tournatractor with scraper heaps 12 pay yds. of clay in average of 75". When not busy pulling scrapers, rig did pusher duty. Says George Lowe, "Tournatractors have plenty of power." Adds Operator Gerald Otting, "I like Tournatractor for a pusher because it's fast and easy to handle."

Time studies taken recently on Lowe Construction Co.'s 222,750-yd. highway relocation job near Cedar Rapids, Iowa, reveal some interesting comparisons on production of rubber-tired Tournatractors vs. crawler-tractors.

Pulling same size scrapers (17½ yds. heaped), both Tournatractors and crawlers push-loaded 12 pay yds. of clay per load. Haul times, however, varied widely. Tournatractors, with 19 m.p.h. top speed, regularly made a 4200' cycle every 6.8 minutes. Crawlers, with top of 6 m.p.h., completed a 1900' cycle every 8.35 minutes. Tournatractors averaged 9 m.p.h. on haul and return, for 7¼ trips hourly... crawlers averaged 3.4 m.p.h., for 6 trips hourly. In other words, Tournatractors made more trips per hour despite a haul distance double that of the crawler-tractors. On a station yard basis, Tournatractors moved 165% more dirt than the crawlers — 1839 to 687 station yards per hour.

COMPARATIVE TIME STUDIES

Project: Relocate U.S. 30 for overpass of Rock Island Railroad line. Required 37' fill to raise level of approach road 7' above overpass columns.

Location: 6 miles south of Cedar Rapids, Iowa

Contractor: Lowe Construction Co., Marion, Iowa

Material: 222,750 yds. moist blue and yellow glacial clay loaded from borrow pits. All scraper rigs push-loaded by same tractors.

Tournatractor-scrapers vs. crawler-scrapers

	Equipment	Cycle Time (average)	Yards per trip	Trips per 50-min. hr.	Pay Yds. per hr.	Station Yds. per hr.
One-way haul of 2100' with 550' of 5% adverse grade	Tournatractor-scraper No. 1	6.57	12	7.6	91.2	1915
	Tournatractor-scraper No. 2	7.09	12	7	84	1764
	Tournatractor av.	6.88	12	7.3	87.6	1839
One-way haul of 950' with 120' of 10% adverse grade	Crawler-scraper 1	8.18	12	6.1	73.2	706
	Crawler-scraper 2	8.54	12	5.9	70.8	672
	Crawler-scraper 3	8.34	12	6	72	684
	Crawler-scraper av.	8.35	12	6	72	687



WHY CRAWL WHEN YOU



Works faster and cheaper

Here's why Tournatractors beat the crawlers: constant-mesh "instant-shift" transmission put the rubber-tired tractor's 19 m.p.h. speeds to most efficient use. Operator did not have to stop or slow down to change gears. 186 h.p. with rubber-tired traction helped Tournatractor get a heaping load fast. Rig then highballed to the fill fast—at speeds up to 19 m.p.h.—without losing vital momentum. With the fast acceleration, high speeds and exceptional mobility, rubber-tired Tournatractor will lick any track-type tractor on the market, regardless of haul length. It will put more pay yards on the fill . . . more dollars in your pocket.

Let us prove our case by showing you the Tournatractor in action on your job. If you would like more information, or if you would like to arrange for a demonstration, send in the coupon below. There's no obligation.

— Send NOW to —

LeTourneau-Westinghouse Company, Peoria, Illinois
Tell us more about rubber-tired Tournatractor

Name Title.....

Company

Street

City State.....



Would like demonstration on my job

T-308-H

"Tournapulls good all-around machines"

Lowe's 5 D Tournapulls worked same 4200' cycle as the 2 Tournatractors. In first 70 working hours, this fleet of 7 rubber-tired units moved a total of 32,000 pay yds. (by cross-section). Prior to this job, 4 of the "D's" did 235 miles of ditching near Cedar Rapids . . . traveling in a 250-mile radius job-to-job under their own power. One 130-mile trip took Tournapulls 7 hours. Owner George Lowe says, "There's no more versatile machine on ditching than this D Roadster. We've had exceptionally good work with them." Adds Grade Foreman Thomas Clark, "For shouldering, you can't beat the D Tournapulls. They're good all-around machines . . . good in mud, too."



Tournapull—Trademark Reg. U. S. Pat. Off.
Tournatractor—Trademark T-308-H

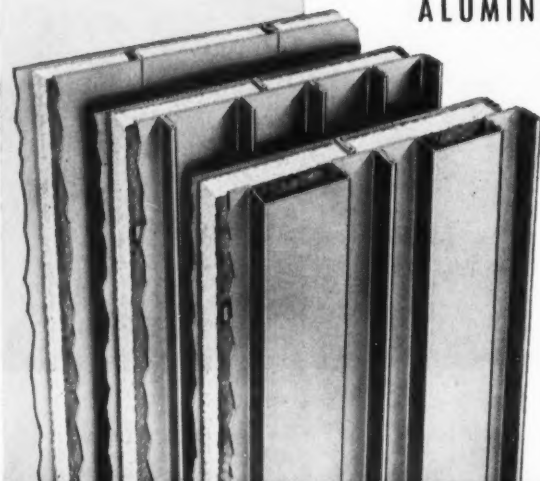
CAN RUN ?

LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

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for INDUSTRIAL and COMMERCIAL BUILDINGS
ALUMINUM, STAINLESS or GALVANIZED STEEL



FLUSH, RIBBED, or FLUTED
Over-all "U" Factor of Various Types is Equivalent
to or Better than Conventional 16" Masonry Wall

The trend to metal walls for new industrial and commercial buildings is evidenced day after day with more architects and designers turning to this modern, economical, timesaving, permanent type of exterior wall construction. The Lincoln-Mercury plant illustrated below is one of three complete plants built by one manufacturer employing aluminum exterior walls throughout . . . another manufacturer has employed Mahon Aluminum Insulated Walls on two completely new plants involving fourteen separate buildings. One Power Company has built three large steam powered generating plants employing Mahon Stainless Steel Walls on one, and Aluminum on the other two. Insulated Metal Walls offer definite advantages in lower cost of both materials and labor, reduction in construction time—plus the fact that these walls can be erected under weather conditions which would preclude masonry construction. Insulated Metal Walls also lend themselves to individual architectural expression in building design. Mahon Insulated Metal Walls are available in the three exterior patterns shown at left. The Mahon "Field Constructed" Fluted or Ribbed Wall can be erected up to sixty feet in height without horizontal joints—a feature of Mahon walls which is particularly desirable in powerhouses or other buildings where high expanses of unbroken wall surface are common. See Sweet's Files for information or write for Catalog No. B-53-B.

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Detroit 34, Mich. • Chicago 4, Ill. • Representatives in All Principal Cities

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MAHON

Sidelights for Contractors

By John C. Hayes, Counsel

Taxes

Accrual of Income.—A circuit court has upheld a construction company on the accrual basis of accounting in not reporting as income in 1943 the retained percentage of its fee under a government cost-plus contract, where the project was completed in 1943 but final acceptance by the government's representatives and the final audit did not occur until 1944. Since the contractor's interest in the retained percentage was subject to proper set-offs and deductions, if any, which might be revealed by the audit, the court felt that an unconditional liability on the part of the government to pay the contractor a fixed and definite sum did not arise in 1943.

Offers in Compromise.—With respect to offers in compromise of tax liability filed by taxpayers on and after July 1, 1953, the Internal Revenue Service has announced that authority to accept such offers has been delegated to its field directors in cases of tax liability of less than \$500. If the amount of liability exceeds \$500, the local director can recommend acceptance but final action is to be taken by the commissioner in Washington. In neither instance is it any longer necessary to have the further approval of the Secretary of the Treasury.

Death Benefits.—The income tax regulations have been amended to provide expressly for the exclusion from gross income of proceeds up to \$5,000 paid by an employer under a contract providing for the payment of such amounts to the beneficiaries of an employee, paid by reason of the death of the employee, if received by the beneficiaries during a taxable year beginning after December 31, 1950. It is immaterial whether the proceeds are received in a single sum or otherwise, but the exclusion is applicable only if payment is made under a binding contract that obligates the employer to pay the amount to the employee's named beneficiaries.

Estimated Tax.—The Tax Court has stated that taxpayers who substantially underestimate their income tax cannot avoid the statutory penalties

provided therefor by showing reasonable cause for their low estimates. The court found, on the facts before it, that the taxpayers' failure to file original declarations having a reasonable relationship to their tax liability for the prior year, and amendments thereto to reflect large capital gains known to have been realized in the taxable year, reflected gross negligence rather than reasonable cause to comply with the current payment feature of the tax statute. The commissioner conceded, however, that had the taxpayers filed their final returns on or before the following January 15 and paid the balance of the amount shown to be due, they could have avoided the penalty for underestimating their taxes.

Partnership Income.—While recognizing that there is a split of authority among the circuit courts on the question, the Tax Court has adhered to its previous position that a partnership continues after the death of a partner if the partnership agreement provides for continuation and that such a deceased partner need not include in his final return his share of the partnership income to the date of his death. Under such view, partnership income for the full partnership year in which the partner died is to be reported in the return to be filed by the deceased partner's estate.

Stockholder's Advances.—A circuit court has refused to permit a stockholder to deduct as bad debts the amounts of advances he had made to an inadequately financed corporation in proportion to his capital contributions.

Transportation Tax.—The tax on transportation of property, according to a circuit court ruling, does not apply to trucks and drivers employed in a rock quarry in moving stone to the crusher and subsequently to stock piles, all on the quarry premises, even though it be considered that the trucks and drivers are engaged in the business of the truck owner rather than of the stone company. The court stated that the transportation tax has no application to the movement of property which is limited to the prem-

ises on which mining, quarrying, manufacturing or other form of productive enterprise is carried on and which forms an integral part of such enterprise.

Cancellation of Debt.—Where a valid indebtedness was due a corporation by a stockholder, the Tax Court held that the subsequent cancellation of the account receivable by the corporation resulted in a taxable dividend to the stockholder.

Public Contracts

Renegotiation.—While the Renegotiation Act is scheduled to expire according to its present terms on December 31, 1953, two bills have been introduced in the House of Representatives to continue it in effect for another year or longer.

The Renegotiation Board has amended its regulations concerning consolidated renegotiation of affiliated groups and related groups. Basic conditions for the allowance of an over-all loss as a cost in the succeeding year for a single contractor and for a consolidated group are set forth, as well as application of hardship and inequity provisions.

Assignment of Claims.—A circuit court held that the Federal Anti-Assignment Act did not nullify a liquidating corporation's assignment of its uncompleted government contracts to a succeeding partnership comprised almost entirely of its shareholders. The transaction was considered by the court to be more in the nature of a change of business structure than a transfer.

Misdescription of Property.—Where a high bidder for a surplus Navy crawler shovel was misled by an erroneous statement in the bid invitation that the shovel contained an engine, the Comptroller General held that the bidder was entitled to rescission of the purchase contract before delivery and to return of its bid deposit, although the bid invitation also stated that the property was subject to inspection and was offered without warranty of any kind.

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THIS INTERMEDIATE LONGSPAN is a descendant of the original Macomber Bar Joist—grown up now—carrying the heavier loads of industrial plant roofs.

This sturdy structural member functions in an economical way between Bar Joist Purlins and Standard Longspans. And look at the job it does.

Any owner would be proud of this factory unit but happier still about the Industrial Engineer who remembered about this intermediate approach to good structural design.

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CANTON 1, OHIO

• ENGINEERING • FABRICATING AND ERECTING •

Competition: Heartbeat of Free Enterprise

» WIDE fluctuations in demand for various types of construction, the extreme business hazards that have been associated with the business, and the highly diversified elements that make up this vast industry have combined to produce through the years recurrent efforts on the part of some of these elements to protect themselves from economic buffetings by trade restraints or restrictive practices.

The Committee for Economic Development, in its recently published research study, "Stabilizing Construction" by Colean and Newcomb, cited a long history of investigations by state authorities, the Federal Trade Commission, and the U. S. Department of Justice which noted efforts of specialty contractors, materials distributors, manufacturers of materials and equipment, and construction labor "to control the vagaries of their markets."

(The CED report added: "There is little evidence involving builders and general contractors; the 1939-41 investigation of the construction industry undertaken by the Department of Justice resulted in only one indictment involving general contractors; the files of the Federal Trade Commission reveal no complaints on this score; and the state investigation studies revealed no involvement of general contractors in any of the various types of combinations.")

"On the part of the contracting groups, which in this case generally means special-trade contractors," the CED report continued, "the methods usually adopted include agreements to reveal bids, to follow given formulas for estimating overhead and profit, to refuse to reduce bids without changes in specifications, and to allocate work. On the part of distributors, agreements have been designed to rigidify the channels through which contractors and builders can purchase materials and services. Frequently . . . such agreements have endeavored to prevent the purchase of materials except on an installed basis. In some cases, agreements have included the manufacturers of the materials or equipment involved so as better to prevent the independent purchasing of the affected items by parties not in the combination."

The most effective means of enforcing such agreements, the CED said, "is to secure the cooperation of labor organizations as enforcing agents."

The report concludes that, while some restrictive practices may have been tried for protection in the face of variations in demand, and to stabilize costs, they actually tend rather to increase costs and to thwart technological advancement and increase productivity.

"As a result, buyers of construction have been hurt by being forced to pay more than need be, while the construction industry itself has suffered from artificially created limitations on its potential market and on its ability to meet the changing characteristics of demand. As instruments for effectuating true industrial stability, trade restrictions must be classed as failures."

It is understandable that one school of thought would control competition to some "desirable" level by "cooperation" among some segments of the industry for protection against the relentless force of competition.

But such a move would deprive the public of the very benefits that are assured by what we call the system of

American Capitalism—a system based on freedom of commercial action.

The path to controlled competition which this school of thought has tried to follow has many pitfalls, including running directly athwart the antitrust laws set up to protect this system, disastrous publicity when exposed, and the shielding of incompetent business management.

The United States Supreme Court has made it crystal clear that the Sherman Act was intended to make it certain that competition should be the rule in all commercial transactions. In the case of *Allen Bradley Co., et al.*, 325 U. S. 797, where the right to relief by injunction was upheld, the Court stressed, "The primary objective of all antitrust legislation has been to preserve business competition and proscribe business monopoly."

Attorney General Herbert Brownell, Jr., has expressed "an uncompromising determination that there shall be no slackening of effort to protect free enterprise against monopoly and unfair competition."

In commenting on the latest case in the building industry (see Page 22), he expressed hope that the indictment "will prove effective in restoring to the citizens . . . their right to the fruits of free and competitive bidding in such an essential industry, and that it will serve as an effective deterrent to other bid-rigging and price fixing schemes which violate the antitrust laws."

Similarly, Assistant Attorney General Stanley N. Barnes, head of the Antitrust Division of the Department, said: "Conspiracies of the nature charged in this indictment, resulting in destruction of competition with a consequent unreasonable increase in the cost of electrical supplies and installation, deserve vigorous action by the department."

The Justice Department has handled several cases charging bid rigging or channelization of materials involving specialty contractors during the past three years, nearly all resulting in judgments against the defendants.


Throughout its history, The Associated General Contractors of America has fought for free and open competition. As the late Adolph Teichert, then president of the A.G.C., stated in 1950 when the industry was in the throes of its most intense competition in recent years:

"The construction industry traditionally has been an industry of fierce and intense competition. Most of us believe that this industry, as well as all others, should continue to have free and open competition even when that competition becomes so fierce as to be termed suicidal. One of our duties is to work to keep it so."

One of the association's current activities in this direction is to point out that the bill, S. 848, would (1) do much to reduce competition, (2) destroy the means the general contractor now has to break down unwarranted, rigged prices when encountered and (3) allow large mechanical specialty contractors to enjoy a limited business monopoly.

As to the fears of "disastrous" and "suicidal" competition, it would seem that sound bidding is the exercise of good business judgment, which all successful businessmen must have or acquire.

35 NORTHWESTS



THE well known jobs that the Savin Construction Co. of E. Hartford, Conn., has handled are almost too numerous to mention. The Maine Turnpike, New Hampshire Turnpike, the New Jersey Turnpike — These are just a few of the better known operations that have made the Savin name well known in the construction industry.

Now the Savin name and Savin Northwests are appearing on the Pacific Coast along with the name of Merritt, Chapman and Scott.

Here is an outfit that can buy any make of equipment it wants, yet year after year they add to their fleet of Northwests. Savin's 35th Northwest has just gone to work at Folsom Dam at Folsom, Calif.

Repeat orders from successful contractors like the Savin Construction Company can be a guide on your Shovel, Crane and Dragline purchases. There is no better guarantee of the type of service you want.

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Clearance of Contractors

Three regional Industrial Personnel Security Boards have been established to review cases in which a contractor has been denied clearance for work of a security nature. The boards are empowered to grant or deny clearance to firms or to their individual employees for work under contracts in which they would have access to classified military information.

The three offices, located in New York, Chicago and San Francisco, will screen contractors' personnel for such work and review the findings of investigators. A contractor will not be denied a contract because of employees who are not cleared, but they cannot be given access to classified military information.

Separate Contracts Rejected

After a hearing and investigation of other procedures, the Board of Education of the Houston (Tex.) Independent School District, voted to return to the one bid and single contract system in awarding future contracts for construction of public schools.

The action was taken after the Mechanical Contractors Association in Houston had requested the school board to revise its procedure, from that of requiring the general contractor to name the mechanical subcontractor and amount of the subcontractor's bid, to a method whereby the school board would take separate mechanical bids and then require the low general contractor to take over the low mechanical bid.

Special Committee Study

The school board has appointed a special committee to make recommendations upon the mechanical contractors' request after investigation. The Houston Chapter of The Associated General Contractors of America was represented at the hearing by Russell W. Nix, Dunbar Chambers, Howard Tellepsen, Joseph Baxter and J. T. Hubbell.

The Houston Chapter has reiterated its desire to meet at any time with the subcontractors for the purpose of improving relationships in a letter from Emmie H. Cox, chapter president.

1953 new construction volume will be re-estimated this month by the Commerce and Labor Departments. The A.G.C. has tentatively estimated it at over \$34 billion.

July Construction Maintains Record Level

• \$3.3 Billion Expended Is 8% Above Last July—Records Set

» TOTAL expenditures for new construction rose slightly in July to a new monthly peak of almost \$3.3 billion and were 8% above July 1952, according to preliminary estimates of the U. S. Labor Department's Bureau of Labor Statistics and the Building Materials Division of the U. S. Department of Commerce. The small July increase (about 20% above the June estimate) resulted chiefly from seasonal gains in highway construction and in private outlays for public utilities, plus a more than seasonal rise in commercial construction.

Private Spending Up

Private spending for public utilities reached a monthly record of \$410 million in July, and outlays for private residential building (about the same as in June) exceeded \$1 billion for the third successive month. Commercial construction rose 9% to \$165 million, but private industrial construction declined more sharply in July than during the past several months. Total private expenditures for new construction put in place during July amounted to \$2.2 billion—about the same as in June, but 9% above July 1952.

Public construction expenditures

were boosted 5% during July to \$1.1 billion, chiefly because of the gain in highway work, which rose 9% during the month to \$360 million. Increases occurred for most other major types of public construction also, but the gains generally were less than seasonal.

New Records Made

Thus far in 1953, new spending records have been established for several types of construction, including private expenditures for new residential building, public utility construction, and commercial and educational building. In the public sector, expenditures for highways and schools also exceeded any previous January-July total. Although private industrial construction has been declining since February, expenditures in 1953 for this work almost equaled the record 1952 figure, when totals for the first 7 months are compared.

Total expenditures for new construction put in place during the first 7 months of 1953 amounted to \$19.3 billion, a gain of 8% over the same 1952 period, and physical volume (expenditures adjusted for price changes) also was up slightly from 1952.

Floete Appointed to Oversee Defense Work

• Assistant Secretary for Installations; Creedon Plans Unknown

» FRANKLIN G. FLOETE, one-time contracting firm head, early this month was sworn in as Assistant Secretary of Defense in charge of Properties and Installations. As such, he will supervise the coordinating functions for construction performed by all the armed services which have been exercised for a year by Frank R. Creedon under the title of Director of Installations.

Mr. Floete, a native of Armour, S. Dak., graduated from the University of Wisconsin with an A.B. degree, and received a law degree from Harvard. A captain in the army during World War I, he owned and operated the Armour Bank in South Dakota from 1915 to 1917, and owned a retail lumber business from 1925 to 1932.

From 1932 to 1941 he was associated with the Wood Brothers Construction Co., and the Lancaster Corp.

of Lincoln, Neb., first as comptroller, and later as president. He then owned the Mid-Town Motors in Des Moines, Iowa, from 1941 to 1946. He owned the Iowa Ford Tractor Co. from 1941 until 1952, when he retired.

By the first week in August, Mr. Creedon had not made known any future plans. His post of Director of Installations was created under the previous Administration under Public Law 534, 82nd Congress, to maintain surveillance over planning and construction by the military departments of all public works projects. His work has been praised by Congressional committees concerned with economy in such projects.

The new position assumed by Mr. Floete is part of the reorganization plan for the Defense Department which created six new assistant secretary positions.

Effort to Reduce Competition Runs Afoul of Antitrust Law

- Chattanooga Specialty Contractors Fined by U. S.
- Court Refuses to Dismiss Charges Against Union

» THE PITFALLS of attempting to reduce or "control" competition in the construction industry have been highlighted by several actions brought by the Department of Justice during the past three years on charges of bid-rigging or channelization of materials involving specialty contractors, and, in some cases, unions.

Electrical Contractors Fined

The latest example of such attempts running afoul of the antitrust laws was the fining in a United States District Court in Chattanooga, Tenn., of an electrical contractors association, its secretary-manager, a firm and six

individuals connected with electrical contracting firms after indictment by a special federal grand jury on charges of "conspiring to unreasonably restrain trade in the sale and installation of electrical equipment in violation of the Sherman Anti-Trust Act."

See editorial on competition — — Page 19

Also indicted on the same charges were the local union of the International Brotherhood of Electrical Workers and the business agent of the union. Their motion to dismiss

charges was overruled and they were awaiting arraignment in court early this month.

The Justice Department identified the association as "the Chattanooga Chapter, National Electrical Contractors Association, Inc."

(Editor's Note: The action naturally does not imply that any conduct leading to such charges was condoned by the N.E.C.A. It was taken only against the local association.)

All the defendants except the union and its business agent entered a plea of *nolo contendere* (no defense) and were fined a total of \$16,500 by Judge Leslie R. Darr, who said, "This seems a flagrant case of choking out trade in the Chattanooga area."

Although the defendants pleading no defense stipulated that they were not admitting that all the indictment charged was true, the court accepted the plea as "a plea of guilty." However, the court took into consideration arguments by defense counsel that the offense was not one that merited "heavy punishment," that it was a case of a "first offender and a last offender," that they had no criminal records, and that a great amount of embarrassing publicity had resulted from the case.

A.G.C. Board Meeting Set for Sept. 14-16

- To Examine Economic Picture at Chicago Conclave

» THE GOVERNING and Advisory Boards of The Associated General Contractors of America will hold their mid-year meeting in Chicago, Sept. 14-16, at the Edgewater Beach Hotel.

With construction volume expected to set a new record of \$34 billion in new construction this year, the general contractors will scan the economic horizon for signs of what the future holds. Their attitude now is one of cautious confidence based on the character of the present demand for construction which reflects a main area of expansion related to civilian production rather than the defense program.

An attendance of 350 is expected at the meeting which will be attended also by the presidents, secretaries and managers of the chapters and branches of the A.G.C. from every state in the Union. Executive Director James D. Marshall said specific subjects to be discussed will include national legislation affecting the industry; matters of contracts and specifications; labor relations; accident prevention; apprentice training; public relations and association affairs.

A report on industry developments and A.G.C. activities during the preceding six months by H. E. Foreman,

A.G.C. managing director, will be presented to the board. At the concluding session the board will nominate the president and vice president who will be voted on by mail ballot of the membership during the winter.

General sessions of the boards will be held on Monday, Tuesday and Wednesday mornings. The meeting will be called to order on Monday morning by President C. P. Street, of Charlotte, N. C., who will then deliver his opening statement. Separate meetings for building contractors, highway contractors and heavy construction and railroad contractors will be held.

Board sessions will be preceded by a meeting of the A.G.C. executive committee on Sunday, Sept. 13. Other committee meetings will be scheduled for Friday, Saturday and Sunday preceding the opening of the meeting.

The A.G.C. Secretaries' and Managers' Council will meet in general session on Sunday morning, with separate sessions for the secretaries and managers of building, highway and heavy construction chapters in the afternoon. A reception will be held Sunday evening at which the Chicago Builders' Chapter of A.G.C. will be host.

Indictment Outlined

The Department of Justice outlined the indictment on July 7 as follows:

"The indictment charges that the value of electrical equipment sold in 1952 by electrical contractors in the Chattanooga area was over \$1 million and that more than 75 per cent of such electrical equipment was sold and installed by members of the defendant association. The defendants are accused of having engaged in a conspiracy, under the terms of which such defendants agreed to determine which electrical contractor would submit the low bid to general contractors and that defendant contractors other than the one so selected would submit complementary bids at higher prices, or else would not submit any bid.

"The indictment also charges that any member of the association who fails or refuses to comply with the selected bidder system shall be subjected to punishment by fine, and that defendant union will not furnish union labor or will supply inferior labor to electrical contractors unless they agree not to compete with association members on jobs which association members wish to have.

"The indictment alleges that the cost of electrical equipment installed in the Chattanooga area has been increased out of proportion to increases in material and labor costs, and to increases in other construction costs."

Justice Officials Comment

Attorney General Herbert Brownell, Jr., stated: "It is sincerely hoped that this indictment will prove effective in restoring to the citizens of the Chattanooga area their right to the fruits of free and competitive bidding in such an essential industry, and that it will serve as an effective deterrent to other bid-rigging and price-fixing schemes which violate the antitrust laws."

Assistant Attorney General Stanley N. Barnes, head of the Antitrust Division of the Justice Department, had this to say: "It is imperative that illegal road blocks be removed from the path of the building industry. Conspiracies of the nature charged in this indictment, resulting in destruction of competition with a consequent unreasonable increase in the cost of electrical supplies and installation, deserve vigorous action by the Department."

Union Plea Overruled

In overruling the plea for dismissal entered for the union and its business agent, the court found that they were not protected by the Clayton and Norris-LaGuardia Acts which provide that antitrust laws are not applicable to labor organizations while they are carrying out legitimate objectives. The court stated:

"The motion complains of sundry defects in the indictment by setting out isolated portions . . . But the indictment must be construed as a whole. The court feels that it is unnecessary to consider each of the isolated defects alleged, but consider only those affecting the two questions the court deems to be presented. (1) Do the provisions of the Clayton Act and the Norris-LaGuardia Act render these defendants immune from prosecution under the indictment? (2) Were the acts charged in the indictment done in restraint of commerce among several states?"

"The indictment purports to charge a conspiracy to violate the Sherman Act. The actions of all conspirators are unitary. . . .

" . . . the court concludes that the indictment clearly shows the union and its business agent with a violation

A.G.C. and Army Study Jet Runway Specs

• Joint Committee Reviews Contractors' Complaints

» A SPECIAL committee on asphalt pavement specifications between the A.G.C. and the Corps of Engineers met July 23 in Washington to consider possible changes in specifications for the high-speed runways used principally by jet aircraft.

The committee was formed following complaints by contractors on the requirements of Air Force specifications on this type of runway pavement. At a meeting of the A.G.C. Task Unit for Corps of Engineers Specifications June 4 the subject of runway specifications came up and N. K. Dickerson, Jr., chairman of a special A.G.C. committee to study the problem reported on his committee's activities.

Though the group recognized that beneficial changes had been made, it was felt that a review of the "Flexible Paving Engineering Manual" and the "Guide Specifications for Bituminous Binders and Surface Courses" would be desirable. This was the purpose of last month's meeting.

Specific items discussed at the meeting included compaction requirements, the use of local materials in mixing asphalt, job-mix design, alternate bids, specific gravity tests and roller requirements.

A formal submission of all the topics discussed last month will be made to the Office of the Chief of Engineers which is responsible for all Air Force construction.



Attending meeting of the special A.G.C. Committee on Asphalt Pavement Specifications with the Corps of Engineers last month are, clockwise, as follows: Mason Prichard, special assistant on military construction; Col. C. N. Kibler, assistant for Army construction; and Gayle McFadden, chief of engineering division, air fields branch, all of the Corps. And, John P. Frazier, Harrison Construction Co., Pittsburgh; N. K. Dickerson, Jr., Dickerson, Inc., Monroe, N. C.; J. M. Sprouse, manager, Heavy Division, A.G.C. staff, Washington, D. C.; C. R. Ralph, Kaw Paving Co., Topeka, Kan.; Harold O. Parish, Parish Brothers, Benecia, Calif.; R. J. Morrison, Dickerson, Inc.; C. P. Ballenger, Jr., Ballenger Paving Co., Greenville, S. C.; and B. B. Armstrong, Armstrong and Armstrong, Roswell, N. Mex., representing the A.G.C.

of the Sherman Act, in being a party of the combination acting in restraint of commerce and that for such violation the union and its business agent are not protected by the Clayton Act and LaGuardia Act. The motion to dismiss is overruled."

These defendants were to be arraigned in court for a plea of guilty or not guilty.

While no special investigating effort into the construction industry's operations on a wide scale such as was con-

ducted in 1939-41 is indicated, Justice officials have expressed a determination to take prompt action wherever possible.

It has been pointed out that the Justice Department frequently has had difficulty in establishing jurisdiction—as it must, under the interstate-commerce clause of the Constitution—where the combinations, particularly those of subcontracting and labor groups, were definitely of a local character.

Two New Members Announced for NLRB

• Industry Hopes for "Fresh Approach" to T-H Administration

» ANNOUNCEMENT of two new replacements in the five-man National Labor Relations Board last month was accepted with a general feeling of optimism by construction management that the changes may lead to more efficient administration of the board's functions in the future.

Industry leaders' hope that a fresh approach to administration of the Labor-Management Relations Act would be taken by new members without a pre-formed prejudice against it was highlighted by the promise of the new NLRB chairman, Guy Farmer, to emphasize an "even-handed application" of the Taft-Hartley Act as his policy in his new post.

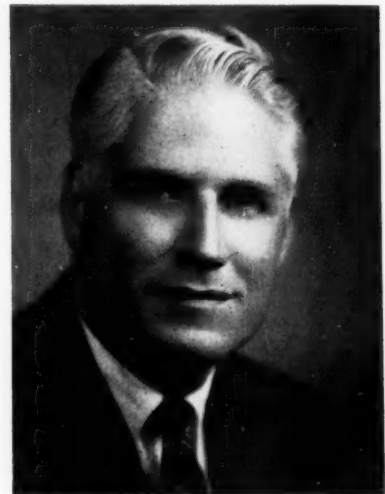
Mr. Farmer announced this policy in a short address at a "full house" turnout of NLRB employees and representatives of labor and management for swearing-in ceremonies marking his succession of former Chair-

man Paul M. Herzog who resigned June 30.

At Senate confirmation hearings, Mr. Farmer advocated that more weight be given to trial examiners' reports at the board, thus by-passing time-consuming consideration of case records, and a requirement that objections to trial examiners' intermediate reports be more specific than they have been in order to speedily dispose of cases involving unfair labor practice charges.

A Washington, D. C., lawyer, Mr. Farmer is 41 years old, a native of Virginia, was educated at West Virginia University and as a Rhodes Scholar at Oxford, England. He was a junior attorney with the NLRB in 1938-39, associate general counsel of NLRB in 1943-45, and entered private practice in 1945.

His appointment covers the remainder of Mr. Herzog's 5-year term



Mr. Farmer

to expire August 27, 1955.

Philip Ray Rodgers, 37, of Silver Spring, Md., who has been connected with the Senate Committee on Labor and Public Welfare since 1947, is the other new appointee, succeeding John M. Houston, former Kansas Congressman who began his NLRB tenure under the New Deal in 1943. Mr. Houston's term expires August 27.

A lawyer and native of Utah, Mr.

Final Labor Department Appointments Made

• Durkin Gets Three Assistants, New Solicitor and Head of FMCS

» AS CONGRESS adjourned, the Administration filled out its remaining positions in the Department of Labor in the form of three assistant secretaries and a solicitor. In addition, the new head of the Federal Mediation and Conciliation Service was confirmed.

The three assistant secretaryships went to Spencer Miller, Jr., a former New Jersey State Roads Commissioner; Harrison C. Hobart, assistant grand chief engineer (vice president) of the Brotherhood of Locomotive Engineers; and Rocco C. Siciliano, of NLRB and some management background.

New Assistant Secretary Miller was sworn in last month at a ceremony well attended by AFL officials. The 62-year-old Republican was sponsored by Sen. H. Alexander Smith (R-N.J.), chairman of the Senate Labor Committee. Mr. Miller was an early advocate of the International Labor Organization in 1915 and a director of the Workers' Education Bureau of America. His most recent post has been president of American International College at Springfield, Mass.

He succeeds Philip J. Kaiser as assistant secretary in charge of the department's Office of International Labor Affairs.

A CIO candidate for one of the three assistant secretaryships was named earlier but it was turned down by the White House and the labor organization did not name another. Harrison C. Hobart, 64, is a resident of Houston, and vice president of the Brotherhood of Locomotive Engineers. The CIO had submitted the name of John Edelman, of its Textile Workers.

Rocco Siciliano takes over the post reserved for an appointee with management background. He is a 31-year-old native of Salt Lake City who since 1950 has been with Procon Incorporated, a wholly-owned subsidiary of Universal Oil Products Co., Chicago. Siciliano has served that organization as assistant secretary, supervisor of labor relations and assistant treasurer in the three years of his association with Procon. He formerly was an assistant to NLRB Member Abe Murdock.

Named as the new head of the Federal Mediation and Conciliation Serv-

ice last month was Whitley P. McCoy, well-known arbitrator and professor of law at the University of Alabama. Mr. McCoy, a self-confessed Eisenhower Republican was acceptable to the late Majority Leader, Robert Taft, and the Senate Labor Committee.

Mr. McCoy, under questioning by the Senate Labor Committee, declared that his concept is that government so far as possible should allow management and unions to work out their problems themselves. FMCS, he said, should "mediate only" and should not "arbitrate."

Stuart Rothman, 39, a University of Minnesota Law School graduate and former research fellow at Harvard Law School, has been confirmed as solicitor of the Labor Department. Although he has had no experience in labor relations, Mr. Rothman has a background which indicates some familiarity with building and construction problems. He has handled legal work for the Rural Electrification Administration, the Federal Public Housing Authority, and the Office of Surplus Property. The Labor Department believes him capable of administering the Davis-Bacon and Walsh-Healey Acts, which set up wage rates on public works and labor standards on government contracts.



Mr. Rodgers

Rodgers received a B.S. degree in history and political science with *magna cum laude* and an M.S. degree in public administration from the University of Utah, attended Stanford University under a scholarship award, received a Ph.D. in public administration from American University and an L.L.B. degree from George Washington University, both in Washington, D. C.

He was secretary to U. S. Senator James J. "Puddler Jim" Davis of Pennsylvania in 1942-45, and a professor of political science and public administration at American University since 1945.

In addition, he was chief clerk of the Senate Committee on Labor and Public Welfare in the 80th Congress, minority (Republican) clerk of the committee for the 81st and 82nd Congress, and lately has been staff director of that committee.

Styles Resignation Rumored

Meanwhile, reports persisted that NLRB Member Paul L. Styles would soon resign his position on the board. His term expires August 27, 1955. An Alabamian with substantial background in the American Federation of Labor, Mr. Styles served several years as a field examiner for the board in its early days and was a regional director at Atlanta from 1945 to 1950, when he became a member of the board.

The other members of the board are Ivar H. Peterson, who served in varying capacities for the board from 1938 to 1946, then was administrative assistant to Senator Wayne L. Morse before appointment to the NLRB in 1952; and former U. S. Senator Abe Murdock of Utah who was appointed to the board in 1947, then reappointed for a term ending in 1957.

Appropriations Total \$62 Billion As Congress Adjourns in Flurry

- Special Session Threat Posed in Debt Limit
- Wunderlich Bill Held Over Till Next Session

» THE 83rd Congress, holding close to its planned date of adjournment, passed a mass of legislation in a final rush during the last days of its first session, but left several major problems for solution at the next session.

A possibility of a special fall session hung over the lawmakers' heads as the Administration's House-passed request to raise the national debt limit from \$275 billion to \$290 billion failed to get through the Senate.

While Administration leaders said

they would try to live under the present limit until the next session in January, President Eisenhower made it plain in his message to Congress that it would be difficult.

In the time it was free from worry over the debt limit, the tax reduction-balance budget fight, and subjects such as public power versus private power, Congress appropriated approximately \$62 billion, including about \$7.5 billion for fixed charges.

The Defense Department led the list in appropriations, drawing \$34.4 billion. Other major expenditures were earmarked for foreign aid, \$6.7 billion; the Atomic Energy Commission, Tennessee Valley Authority, Selective Service and the Veterans Administration, \$5.3 billion; the State-Justice-Commerce appropriation, \$1 billion; Department of Health, Education and Welfare, \$2 billion; supplemental appropriation, \$745 million, plus an authorization for \$200 million to start the rehabilitation program in South Korea; independent agencies, \$447.4 million; Corps of Engineers for rivers, harbors and flood control, \$440 million; Department of the Interior, \$434 million; aid to the drought-stricken Southwest area, \$130 million plus \$20 million authorization; and the legislative-judiciary appropriation, \$96.2 million.

Major authorization bills enacted include a \$488.7 million measure for military construction, and a new \$127 million federal school construction program for defense-crowded areas.

The major portion of funds appropriated to the Corps of Engineers for civil works functions in fiscal year 1954, in the amount of \$267.8 million, will be allocated to the general construction program, Major General Samuel D. Sturgis, Jr., Chief of Engineers, announced.

Congress specified certain amounts for 81 individual construction projects in 35 states, as well as for emergency bank protection, snagging and clearing, and local protection projects in various states.

Wunderlich Action Continued

In its rush to adjourn, Congress again did not have time to complete action on legislation to provide for judicial review of disputes arising from government contracts, thus offsetting the Supreme Court's decision in the Wunderlich Case in November 1951.

After passage of S. 24 by the Senate to accomplish this purpose (July Constructor), a subcommittee of the House Judiciary Committee scheduled a short hearing for July 30. But its plans were disrupted by the G. O. P. party leaders' cancellation of all hearings because of recess plans, and it announced inability to act during this session. However, the committee convened for one hour to hear witnesses from out of town.

S. 24 retains its status quo until the 2nd session of this Congress, and Rep. Louis E. Graham (R-Pa.), chairman of the House subcommittee, has disclosed plans to complete hearings early in the next session on the measure and its identical companion bill, H. R. 1839, introduced by House Judiciary Committee Chairman Chauncey W. Reed (R-Ill.). At that time, The Associated General Contractors of America, which has consistently advocated this legislation, and which appeared before the Senate Committee, and the bill's opponents will again be heard.

Operation and maintenance will take \$79 million of the approximately \$277 million total. The Mississippi River and Tributaries project, which embraces seven states, will receive \$51.4 million for construction and maintenance, and funds totalling more than \$2.8 million are set aside for surveys and studies.

Interior Department Funds

A compromise \$433.6 million appropriation was sent to the White House for the Interior Department after an unsuccessful attack on the legislation led by Sen. Robert S. Kerr (D-Okla.). It compared with \$406.9 million allowed by the House and \$453 million proposed by the Senate.

The House had allowed \$108.4 million for Reclamation construction and the Senate \$123.6 million. The reduction from the Senate figure includes cuts for nine projects.

The conference committee, in slashing funds for the Bonneville Power Administration by \$5.3 million, recommended that construction of two controversial power lines—the Snohomish-Kitsap line in Washington and the Dalles area service in Oregon—be

"deferred for further study before the next session.

The \$488.7 million authorization for military construction follows closely a request by the Defense Department, but with seven projects eliminated and several others somewhat reduced from amounts requested.

The funds are divided as follows: Army, \$133.7 million; Navy, \$87 million; and Air Force, \$268 million.

Congress, in announcing cutbacks from authorizations made in the past totalling \$758.6 million, said many of the rescinded projects were voluntarily deferred by the services.

It was reported that only two new continental bases are included—an ammunition loading terminal for the Army at Kings Bay, Ga., and an Air Force base at Hammonton, N. J. Most other work will be additions and improvements at existing bases.

Biggest projects eliminated were: Theodore Ammunition Loading Terminal, Ala., \$6.6 million; Big Delta, Alaska, \$4 million; Navy Postgraduate School, Monterey, Calif., \$3.1 million; and Joliet, Ill., Air Force Base, \$4.7 million.

The bill also authorizes an outlay of \$1.4 million for the Alaska Communications System.

Schools, Airports, Hospitals

In its final hours of session, Congress approved a compromise bill authorizing a new \$127 million federal school construction program for defense-crowded areas, reviving and re-vamping a program which lapsed on July 1.

The Administration had urged a scaled-down program providing grants totalling \$94 million, but Congress included only about \$70 million in a supplemental appropriation. The bill authorized \$55 million for old obligations to school districts which applied for grants but never received them because of budget cuts.

In passing the \$1 million State-Justice-Commerce appropriation, the Senate backed down before an adamant House, giving up its fight for \$12.5 million in federal aid for airport construction. Former President Truman had recommended \$30 million, but President Eisenhower's budget cut the funds completely out.

The President signed a bill extending for two years federal aid in hospital construction (the Hill-Burton Act, which expired June 30), on a matching basis with states.

Record of 83rd Congress

Principal legislative actions of the 83rd Congress, 1st session:

1. Passed 13 major appropriation bills, cutting them about \$13 billion below requests of former President Truman.
2. Extended the excess profits tax for six months to Jan. 1.
3. Repealed the 20 per cent tax on motion picture admissions.
4. Gave clear title to coastal states to tidelands out to their "historic boundaries."
5. Extended controls over allocations of scarce materials, and reduced rent controls.
6. Extended the reciprocal trade act for another year.
7. Simplified customs procedures.
8. Continued foreign aid, and authorized a \$200-million rehabilitation program for Korea.
9. Endorsed 10 government reorganization plans and creation of new commission under former President Hoover to make new studies.
10. Authorized admission of 214,000 immigrants and refugees.
11. Approved sending a million tons of wheat to relieve Pakistan.
12. Gave \$150 million drought relief program to Southwest.

Major issues to be taken up again next year include:

- Revision of Taft-Hartley labor-management law.
- Revision of the excise and income tax laws.
- An extension of social security coverage.
- Extending or revising the farm price support legislation.
- Deciding on statehood for Hawaii and Alaska.
- Participation in the St. Lawrence Seaway project.
- Modification of the McCarran-Walter immigration law.
- President Eisenhower's request to hike the government's debt limit from \$275 billion to \$290 billion—an eleventh hour request which passed the House but was snagged in the Senate. This posed a possibility of a special fall session.
- Other important proposals await completion of Congressional action, including S. 24 and H. R. 1839, which would provide for judicial review of disputes arising from government contracts.

Subcontractors' Bill Pending

S. 848, the bill introduced on behalf of specialty contractors to require general contractors to name their subcontractors and prices in bids on federal work, will continue its status quo until the next session of this Congress.

Although the measure has repeatedly been passed over on objections of Senators when brought forth on the Senate "consent calendar," and a similar bill (H. R. 1825), has not been acted upon since being reported out to the House, there is evidence that heavy pressure is being brought to bear in support of this legislation.

The Associated General Contractors of America has consistently opposed this and similar bills on the grounds that it would tend to increase costs and add to administrative troubles of the government, would hamper the general contractor in exercising undivided responsibility, would hurt small business, would tend to reduce competition, and would not be in the public interest. (See editorial on page 19.)

»A NORTH CAROLINA general contractor has found value in the practice of sending progress reports on a project to his subcontractors, and tabulating all subcontractor bids and estimates.

When the Little Construction Co., A.G.C., Charlotte, N. C., adopted the periodical-job-progress letter in 1949, it was intended as purely a management function of coordinating the project by aiding subcontractors in scheduling their work. But the idea recently has been praised as a way of improving relations between general contractors and subcontractors, the *National Roofer* reports.

Advantages of Progress Reports

Hilton Bowles, vice president of the Ingold Co., Inc., Hickory, N. C., a roofing contractor, checked with the Little Co. when his firm received a circular letter to subcontractors on the job and received this answer from William E. Little:

"We adopted this procedure shortly after going into business in 1949, as an aid to subcontractors in scheduling their shipments, manpower and financing.

"You might call this a way of improving general contractor-subcontractor relations, but this was not the primary purpose of our periodical-job-progress letter.

"It certainly is true that the success of any construction project is dependent upon the proper coordination of all construction activities on the project.

"A delay caused by the roofing contractor failing to show on schedule costs every subcontractor who is dependent on a dry building as well as delaying the over-all progress of the general contractor. It is our thought that most delays are unnecessary if everyone concerned is aware of the job progress.

"On one of our projects the subcontracts total 62 per cent of the total contract. The efficiency with which subs execute their contracts can therefore be most important to the success of the general contractor."

Progress Circular Outlined

The Little company's circular letter on job progress contains:

Contractor Reports Job Progress To Subs for Project Coordination

- Also Tabulates Subcontractor Bids and Estimates
- Specialty Contractor Praises Little Co.'s System

- Name of the project manager and his telephone number.

- Name of the superintendent.

- Name of the foreman.

- Name and address of the architect.

- A description of the job's progress and details of the anticipated schedule, with a listing of the date on which different materials and services are to be delivered or started.

- A list of all the subcontractors with a digest of all the work they have done, all the materials they have delivered, and the work anticipated and remaining to be done.

Tabulation of Bids

In addition to the progress report to subs, the Little firm also tabulates all subcontractor bids and estimates—a procedure which has met with mixed feelings, possibly because of the wide range between bids.

On one project, four bids received by the general contractor on a subcontract operation ranged from \$29,000 to \$38,500. The lowest bid was thrown out because it had been received two days after the deadline. In all cases, with the exception of those thrown out for this reason, awards went to the low bidder.

Mr. Bowles, who is a director of the National Roofing Contractors' Association and chairman of its Cost and Overhead Committee, believes the tabulation of bids is a good move. He wrote the *National Roofer*:

"Since general contractors' bids are published, I don't see why any subcontractor should object to his bid being listed. I feel rather strongly that it is high time the subcontractors, especially the roofing contractors get out of the cellar and win their work on merit rather than trying to pull some string or deal which usually resulting in price cutting.

"It is our conviction that the subcontractor whose bid is used by the general contractor in getting the job, is entitled to the subcontract. If a low bid is selected from a pre-determined list of qualified subcontractors who have been invited to furnish bids, the problem is simple. If a low bid is received from an uninvited or unknown contractor, then it seems that the general contractor should decide as to his qualifications beforehand and if his bid is used, he should get the job."

Management Rewards Writers

- Cash awards totaling \$1200 have been presented to nine employees of the Dravo Corporation, Pittsburgh, as winners in an annual competition sponsored by the firm to stimulate its engineers in writing articles for trade publications and professional and business associations.

The award winners had written technical papers over a wide range of subjects, including one on the Elrama Power Station project which won the first prize of \$500; one on pretreatment of surfaces for corrosion resistance, which won the second prize of \$300; and one on safety precautions during construction of Locks 2 on the Monongahela River, which won \$100.

- The shortage of engineers, currently hampering construction management, came up for keen appraisal at the College-Industry Conference at Northwestern University recently. Kurt F. Wendt, a University of Wisconsin professor who has excelled in highway research, told the conference that industry must financially encourage college freshmen who would not be otherwise able to study engineering. Don P. Reynolds, an official of the American Society of Civil Engineers, opined that productivity would increase if engineers "in the middle brackets" (neither just beginning or at the peak of their careers) were to receive more adequate salaries.



Mr. Little



Mr. Bowles

Firm Stresses Good Industrial Relations

• Department Includes Safety, Personnel and Public Relations

»MANAGEMENT of a successful contracting company today, aside from technical and engineering know-how, requires a well balanced program in accident prevention, personnel and public relations.

The Fisher Contracting Co., Phoenix, Ariz., a heavy construction firm, recognized this need and established an industrial relations department April 1 to carry out the program.

Founded 40 years ago with a steam-powered trenching machine and a six-man crew, the company has grown steadily. Late last year it became evident to firm officers Del and John Fisher that they would have to be relieved of many personnel and public relations functions. They also realized that a safety program second to none was absolutely essential.

The resultant search for a manager of the new department led them to Jack Grady, who was then associate secretary of the Industrial Council, Inc., of Phoenix. With the addition of Safety Director Ray Wells, formerly of the Water Users Power District, the company claims the best staffed industrial relations department in the state.

One of the first steps in developing the department was the naming of a three-man committee with the author-

ity to establish industrial relations policies for the company, but subject to final approval of company president Del Fisher.

This committee established an order of priority for the department's job responsibilities, with accident prevention heading the list. Other programs followed in this order: recruiting, selection and placement of employees; public relations program; and employee relations program.

The safety program was launched by the company's top officers who attended safety meetings at construction projects throughout the state, in the firm's yard and at Fisher's Superior Sand & Gravel Division. Following these meetings, safety committees at the job and shop levels were organized on a revolving roster basis and safety equipment preferred by the men was obtained.

"Accidents are simply not good business for anyone," says Del Fisher. "They mean loss of earnings to the employee, they break up our regular crews and make us work short handed, and our production suffers. We like our employees, and we don't want them hurt."

Jack Grady reports that with the safety program underway, he is concentrating on recruiting new employ-

ees and placing them in proper jobs.

The company's public relations program is also being considered anew by Grady's department. Job site conditions are improved by careful attention to traffic control, explanation of projects to the public by signs, and adequate safety measures.

An unusual feature of Fisher's public relations program is its offer of consulting services to other organizations about safety and industrial relations. Mr. Grady's background with the Industrial Council results in frequent calls for his assistance on management problems from other companies. Also, Ray Wells, said to be the only full-time construction safety supervisor in the state, often gives his advice similarly to subcontractors and other special groups.

Summing up the responsibilities of his industrial relations department, which plays an important part in the company's business, Brady said recently, "In the modern mechanical age keeping highly skilled construction workers happy and working at their best is important to the public, because such a program has a lot to do with the ultimate cost of construction. Labor, as you know, is an expensive item in modern-day building.

"Cooperation and suggestions from the building trades unions are always welcome. We expect to work closely with job stewards and business representatives in making this program a success for all concerned."



Arizona Governor Howard Pyle, left, and Del Fisher at recent ceremonies dedicating completed tunnel.



One of Fisher's safety supervisors conducts an on-the-job safety meeting at a highway construction site near Show Low, Arizona. Such meetings are regular affairs at Fisher projects.

Blann on Florida Council

Alex Blann, president of the Blann-Lane Construction Co., Tampa, and a member of the Florida West Coast Chapter, A.G.C., was recently appointed a construction member of the Florida Apprentice Council by Gov. Dan McCarty. The council sets policy for state apprenticeship programs.



Mr. Blann

Mr. Blann, active in the A.G.C. chapter, was chairman of its apprenticeship committee for several years and is an avowed supporter of apprentice training. He attended his first council meeting July 8.

The commission is made up of two representatives each of management and labor from the metal trades, printing, construction and aircraft industry; the state supervisor of vocational training, who is without a vote; and James Vocelle, chairman of the state's Industrial Commission. Mr. Vocelle will vote only in case of a tie.

Trainees Study Labor-Management Course

• Apprentices Learn How to Get Along With the Boss



Officials concerned with the training of Washington, D. C., carpenters shown at recent conference. Left to right: Fred Z. Hetzel, director of the United States Employment Service, who helps select trainees; Nicholas R. Loope, who directs the course; Gino J. Simi, D. C. director of apprenticeship; Robert J. Volland, principal of the Bell School; and Harold Cladny, member of Master Builders Association, A.G.C.

»CARPENTER apprentices in Washington, D. C., are learning labor-management relations along with the other subjects in their training program.

The idea of teaching apprentices how to get along with the boss has

long been important with Nicholas Loope, a former construction superintendent and now director of the local Joint Carpentry Apprenticeship Committee. He put this new course into effect in February at the Bell Vocational High School and promptly established it as one of the five major courses studied by carpenter apprentices before they can graduate to journeymen.

Mr. Loope feels that since the trainees of today will be the foremen of tomorrow it is important for them to have a thorough understanding of the contractor's problems. He says that this additional course will help the apprentice work harmoniously with those around him.

Besides the regular subjects such as trade science and theory, drafting and blueprint reading, mathematics and estimating, and the safety code, Mr. Loope covers economics, the relationship of unions and contractors, the growth of the labor movement in this country, and social problems of the worker.

In the beginning, when the course was being organized it was taught by teachers at Bell Vocational, but now Mr. Loope is giving it himself.

The apprentices receive two hours of this course each semester for a total of 16 hours during their period of training. In the future Mr. Loope hopes to increase the number of semester hours to three.

New Apprentice Training Film Released

• A.G.C. Helped Labor Department With Production

»A DOCUMENTARY film, "Apprentice Training," showing the development of an apprentice bricklayer into a full-fledged journeyman is available to private groups without charge at regional offices of the Bureau of Apprenticeship, it was announced last month.

The film produced through the cooperation of the Department of Labor, the Bricklayers, Masons and Plasterer's International Union, the Structural Clay Products Institute, and The Associated General Contractors of America, Inc., was prepared for foreign showing in several languages by the State Department's International Information Administration. Now 16 mm. prints of the half-hour long film are available for domestic exhibition.

Simply told in the film is the story of a high school graduate who began his apprenticeship as a brickmason

and graduated four years later as a journeyman. Woven into the story is the function of the joint committee which sponsored the apprentice, gave him every opportunity to learn his trade and saw to it that he completed the related construction courses.

W. F. Patterson, director of the Bureau of Apprenticeship, said this about the film:

"While the story is that of a typical brickmason apprentice, the entire production gives a fine idea of how any good apprentice program should operate. I am sure those who view it will have a better idea of the details of an apprenticeship program and can get many ideas of how to operate similar programs in other fields."

The bureau announced at the same time that organizations wishing to show this film may do so by applying to any of its regional offices.

CATERPILLAR



\$23,000,000 PROJECT with a Billion-dollar Benefit

Now about 90 per cent completed, the Trenton Dam, in southwestern Nebraska near the Kansas line, promises to return many times its cost to the farmers and taxpayers of the Great Plains area.

In the past 20 years alone, the ram-paging Republican River has caused losses by flood damage far greater than the total cost of the new construction. But flood control is only one of the advantages brought by the dam. Ero-

sion and wind have made this part of the country a typical dust-bowl region, and many thousands of acres of land will soon be made fertile by irrigation. The reservoir behind Trenton Dam will have a shore line of 45 miles and a capacity of 365,000 acre-feet. It will provide fishing and other recreational facilities and will be an aid to wildlife propagation.



This 8-inch dredge pump is powered by a Caterpillar D13000 Engine. Owner A. L. Davidson, of Davidson-Merritt, Indianola, Nebraska, says: "From every angle, Caterpillar Engines are the best and most economical we have ever had in 25 years' experience."

▶ A Caterpillar D8 Tractor with No. 8A Bulldozer feeds loose material to the P&H 5 yard drag-line, powered by a Cat D375 Engine. Owned by Vinnell-United-Bell, Trenton, Nebraska.

The project is under the control of the U. S. Department of the Interior, Bureau of Reclamation. It involves a large number of major contracts, not only for building the dam itself but for railroad and highway relocation and irrigation canals.

Of rolled earthfill construction, the dam is 9,000 feet long, 800 feet wide at the base and 30 feet at the crest. Its volume is 8,000,000 cubic yards. In addition, more than 10,000,000 cubic yards of material must be moved to complete other parts of the project.

As on every big job of this kind, Caterpillar* Equipment is much in evidence. Excavators, compressors, dredges and crushers are powered by Caterpillar Engines. Cat* Diesel Tractors and Motor Graders are used for bulldozing, hauling and road maintenance.

Most of these contractors have proved by long experience that standardizing on the big yellow machines is profitable. Under dusty conditions such as prevail here, Caterpillar filters, seals, air cleaners and other exclusive design features offer top protection against clogging, abrasion and resultant down time. The problem of stocking parts is simplified by standardization. And service by a single nearby dealer, backed by the resources of one responsible manufacturer, helps keep the machines steadily at work.



▼ A rock-crushing plant near Trenton Dam is powered by a Cat D17000 Engine. This plant, and the D6 working in foreground, are owned by C. L. Hubner Co., Denver, Colo.



CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

*Both Cat and Caterpillar are registered trademarks—®

B.R.A.B. Conservation Report Recommends "Building Science"

- Study Is Implementation of 1952 Survey for DPA
- Stresses More Government-Industry Cooperation

» THE BUILDING Research Advisory Board, of the National Academy of Sciences, in completing a two-year study of conservation in building construction for the Office of Defense Mobilization, called for the development of a "building science" to bring together the industry's widely divergent technologies.

The 179-page report, dated June 30, 1953 and representing the final half of the study begun in 1951 for the Defense Production Administration, lists what has been done and what remains to be done in achieving the more than 200 conservation recommendations made last year.

THE CONSTRUCTOR in July 1952 reviewed the first half of the report and published summaries of each of the seven B.R.A.B. panel reports in following issues.

Two A.G.C. members of B.R.A.B. include William Muirhead, of Wm. Muirhead Construction Co., Durham, N. C., a past president of A.G.C. and currently its secretary-treasurer; and Earle J. Wheeler, Frank Messer and Sons, Inc., Cincinnati, an A.G.C. national director from Ohio.

Recommendations were included in the fields of structural engineering; heating, ventilating and air conditioning; electrical systems; and plumbing.

The study was prompted by the Communist attack in Korea and the military build-up in America which followed. Initial purpose was the conservation of critical materials in defense construction so that it would not draw unnecessarily on restricted supplies of certain materials also needed in civilian construction.

Total Industry Included

When by the middle of 1952 the supply of materials had improved and the emergency nature of the situation had eased, the second year's study enlarged its scope to include conservation of materials in the entire building industry.

This latest report is devoted to implementing the conservation measures identified and defined in the first year's study.

B.R.A.B. was advised by some 350 individuals representing theoretical and practical knowledge of building technology. They served on panels, committees and task groups working under the general supervision of B.R.A.B.'s Conservation Committee. The eight advisory panels were appointed by the National Research Council, of which B.R.A.B. is a part.

"Federal Construction Council"

One of the most important developments to come out of this study was the trial run of the proposed Federal Construction Council among the government agencies doing construction work. This trial run, conducted from January through March 1953, demonstrated that the proposed council would be of value as a clearinghouse for the exchange of technical information and a forum to discuss problems common to the agencies.

Advisers on this council included representatives of the Atomic Energy Commission, Navy Bureau of Yards and Docks, Army Corps of Engineers, Veterans Administration, Public Buildings Service, Bureau of Reclamation, and the National Bureau of Standards.

Groups of technicians from these agencies studied common building problems such as ceiling heights in office buildings, pipe corrosion, warehouse standards, allowance for office space, pressure drainage systems, and proper types of paints.

The trial run disclosed to B.R.A.B. that such an agency is desirable since the organization is simple yet satisfactory for the purpose, and that economies in federal construction would result from the coordination of the experience and know-how of the federal construction agencies.

The study in its final analysis posed responsibilities which B.R.A.B. said sooner or later will have to be met by the industry. Means were discussed to induce more segments to consider new ideas and bring all parts of the industry together in closer teamwork so that the basic conservation concept of "lowest annual cost" might be realized.

In the summary of the report there is called for "closer technical collaboration among sectors of the industry with stronger lines of liaison between government and industry."

Implementing 1952 Study

In presenting the implementation phases of the study, B.R.A.B. classified the recommendations of the advisory panels into those affecting design practice and those proposing changes in standards and codes.

The latter recommendations were divided into three groups as follows:

- Recommendations of interest to existing organizations either specifically named or implied.
- Recommendations on matters for which no technical groups have clearly defined responsibility for establishing criteria or standards. Several groups in different fields might be interested in the same subject matter.
- Recommendations on subjects of a very broad scope where more study is necessary to determine the interested organizations.

Group "A" recommendations were sent to technical bodies and the B.R.A.B. staff interviewed individuals concerned. The report covers findings on structural engineering; heating, ventilating and air conditioning; electrical systems; and plumbing.

B.R.A.B.'s advisory panel which studied structural engineering concentrated on principles forming the basis for engineering design with emphasis on the conservation of steel, chiefly that used in steel frames or reinforced concrete steel frames.

Structural Engineering Principles

The panel prepared recommendations with mutual agreement on these several principles:

- Structural engineering design is assumed to be in the hands of competent engineers, and conservation recommendations called for the continued use of such engineers.
- Recommendations for technical standards called for those suitable for uniform use in federal and civilian construction.
- That recommendations on changes in standards were made with understanding they are to be referred to organizations responsible for such revisions.

The panel made its recommendations on revision of standards and research to establish accurate knowledge of various load types to 14 responsible technical organizations.

Following the panel's recommendation, B.R.A.B. proposed that proper technical organizations study the relationship of design factors used in the fields of building design and that these groups provide data to enable the designer to reduce excess in design as one way of conservation.

The heating, ventilating and air conditioning panel made recommendations of improved design standards for conservation. Engineering judgment in design was also stressed as a major way to achieve conservation.

These recommendations, addressed to the technical organizations in this field dealt largely with heating systems in federal construction.

Climatological Atlas Is Needed

In the B.R.A.B. recommendations following this panel study the need for a climatological atlas was stressed. It was further recommended that the interested groups in the building industry should work with the Weather Bureau in compiling the atlas.

The panel studying electrical systems held that responsibility for this work is divided between groups charged with the safety and adequacy of wiring, and the manufacturers of lighting equipment. The responsibility for lighting in buildings, the panel decided, rests "almost exclusively" with the Illuminating Engineering Society, and its design criteria is "adequate and well-integrated."

Conservation in plumbing was chiefly concerned with the provisions of the National Plumbing Code as a standard of design. The Coordinating Committee for the National Plumbing Code acted as B.R.A.B.'s advisory panel on plumbing conservation.

This panel called for a single organization responsible for sponsorship, conduct and evaluation of research on plumbing systems and fundamentals of sanitation. Also called for was an industry-supported technical group for plumbing research.

The implementation of group "B" recommendations—those for which there is no clearly defined responsibility among existing technical organizations—deals largely with conservation through building design and planning. The group studying this problem stressed need for program-

ming requirements, criteria for space and data for "operational" functions in planning practice. Remarks by the group were described as "advisory opinions," and many of the proposals were frankly exploratory.

Favors Modular Coordination

Among the recommendations of the panel on space and planning were the wider use of modular coordination and attempts by the government to "encourage the ingenuity of architects and engineers in the design of federal buildings."

B.R.A.B., unable to follow through with all of the recommendations by this space and planning panel, because of the time limit, selected space efficiency in buildings and hospital planning for case study.

In considering the implementation of group "C" recommendations, having to do with "subject matter on a broad scope" where the interested groups are not readily identified, the panel decided to study chiefly the life probability of buildings. It stressed need for research on the building's initial cost, the maintenance cost and its designed life.

Objectives of this panel's study were as follows:

- To determine amount of interest in life probability of buildings.
- To define problems involved in determining life of a building and their relationship to the "lowest annual cost."
- And to help determine what groups might continue the study of life probability and the establishment of needed criteria.

"Flexible Building" Recommended

Of those building types studied, the "flexible building" was recommended as the best physical assurance against obsolescence. Such flexibility the panel stated, is achieved by the following principles:

- Design of the structure to facilitate changes in use, space arrangement and appearance.
- Design of mechanical systems and equipment for accessibility, for service, and replacement.
- And, design for "demountability and salvageability" of emergency-type buildings.

Research was cited as an instrument of conservation and defined as the "first link in a chain of events that ends with the adoption of new ideas into building practices."

The subject areas of research were identified as:

- Fundamental studies, as in physics or human environment.
- Product development.
- Structures, materials in combination, and mechanical systems.
- Planning research to include the use and function of buildings.
- And economic and socio-political problems.

Restatement was made of recommendation No. 9 of last year's report, which called for joint research by federal agencies of technical problems on design, operation and maintenance of federal buildings, with the goal to spend such building funds more effectively.

It was recommended that the government and the building industry investigate ways to raise adequate funds to set up continuing programs for research in building technology.

The report also made the following recommendations on a set of emergency standards in the event of full mobilization:

- The government should establish a firm policy of collaboration between its own agencies and the recognized groups in the building industry responsible for criteria and standards.
- The government and industry should agree on principles for preparation of emergency technical criteria and standards.
- And, the government and industry should define and provide stand-by machinery for quick preparation of emergency standards and criteria.

All of these actions should be taken to assure a supply of critical materials to the building industry in the event of all-out war so this vital work can proceed without disrupting the production of other war goods such as munitions, equipment and shipping, the report added.

In concluding, B.R.A.B. stated that when it began this study it recognized that it was working with a "big idea." During the survey much was heard in favor of the "new idea." And at the end of the study B. R. A. B. was convinced that the "biggest new idea" was that which would bring together all the diverse sectors of the building industry into a purpose to achieve, out of its loose and heterogeneous arts and technologies, a "building science."

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BUILDING

Building Construction Briefs

- Funds for a \$32-million two-year building program are being appropriated in Florida. University, prison and hospital construction will be begun with the funds.
- In India, a \$12-million newsprint plant is nearing completion of construction under American supervision. There are several marked contrasts there to conditions in the U. S. The ordinary laborer is paid the rupee equivalent of 31¢ per eight-hour day. A good mechanic gets \$1 a day and engineers with degrees from Asia's best universities are so plentiful they are working as machinists, construction foremen and office secretaries.
- Georgia's State School Building Authority was told at its second annual meeting last month that the state's \$200-million school building program, which has been under way for two years, now has 58 new structures under construction and is expanding rapidly.
- A store modernization show will embark on an eight-month tour of 33 cities in October. The traveling exhibit of newest equipment and materials is expected to attract store owners who are already planning to spend a record amount on such construction during 1953-54.
- Denver's first skyscraper is now under way as the first unit of a downtown building development to be known as Mile High Center. George A. Fuller Co., A.G.C., New York, is co-owner of the \$15-million enterprise with Webb & Knapp, also of New York. Contracts have been let to the Raymond Concrete Pile Co., A.G.C., New York, for driving 1065 steel and concrete piles, and to Hutcheson Construction Co., A.G.C., Denver, for excavation of 48,000 cu. yds. of dirt. Hutcheson is taking the excavation down to 44 ft. and pilings will be driven another 30 ft. deeper for the 23-story structure. A Texas company is now constructing another skyscraper—20 stories high—in the Colorado city.
- The House Armed Services Committee last month approved Army plans for construction of a \$21.6 million ammunition loading terminal at Kings Bay, Ga., near the Georgia-Florida line.
- The main building of a new \$64-million Medical Research Center be-

ing built by the federal government at Bethesda, Md., was recently dedicated. The \$20-million structure, which will house laboratories for the study of heart disease and cancer, was built by John McShain, A.G.C., Arlington, Va.

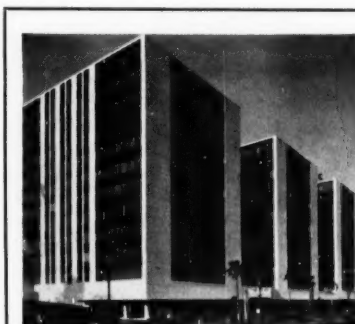
Book Review

Housing and Building in Hot-Humid and Hot-Dry Climates, May 1953, Building Research Advisory Board, Washington, D. C., \$6.00.

A wealth of information, perhaps the most comprehensive collection of its kind, is contained in a conference report recently issued by the Building Research Advisory Board, Washington, D. C., on housing and building problems in hot climates.

The proceedings of a two-day conference held in Washington last November have been published for the benefit of architects and builders who are faced with design and construction of buildings in the tropics. Some of the recommendations are applicable to construction in parts of the United States. One section of particular interest to builders is that devoted to structures and materials in hot climates. In other sections, reference is made to durability of various types of construction as noted in a variety of climates.

The volume may be obtained from the Building Research Advisory Board, 2101 Constitution Ave., N. W., Washington, D. C., for \$6.00.



The name of the general contractor on this fine structure, the Tishman Building in Los Angeles, was inadvertently omitted from the story on office building construction carried in last month's issue of *THE CONSTRUCTOR*. C. L. Peck, A.G.C., Los Angeles, was the builder.

Wings for Business...



America's NEW TWIN-ENGINE EXECUTIVE AIRPLANE

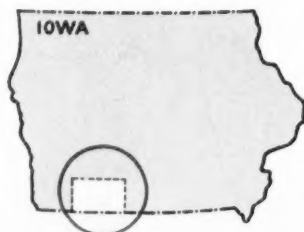
The Aero Commander provides wings for the busy executive to keep pace with the surge of our nation's commerce. This 200-mile-an-hour transport daily speeds key personnel from coast-to-coast. The Aero Commander is a five-to-seven place plane with a non-stop range of 1150 miles.

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Taking Iowa



RINGGOLD COUNTY has 935 miles of county roads. This is the location of farm to market road construction done by the International Crawler fleet of Easter & Schroeder, Inc.

**Pick Your Site and Set Your Hour...
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"IDEAL FOR FARM-TO-MARKET ROAD CONSTRUCTION," say Joe Easter and Don Schroeder (above). "In our eight month's working season, our five TD-18A units, with the sixth as a pusher, moved approximately 540,000 cubic yards, with minimum downtime."



ROAD BUILDING PRODUCTION LINE! Part of the Easter & Schroeder fleet of International crawlers on a regrading job in Ringgold County, Iowa. On this seven-mile stretch they moved 78,000 cubic yards in three weeks' time. *"We move it that way all the time,"* say the owners.



to Town

Farm-to-market roads get big boost fast from the International Crawler fleet of Easter & Schroeder, Inc.

The dirt flies when Easter & Schroeder, Inc., move in with their fast, powerful fleet of International crawlers . . . and Iowans can get to town and back in time to do the milking. For these Griswold, Iowa, contractors specialize in farm-to-market roads in the tall corn state.

Take the seven-mile job in Ringgold County, Iowa, you see here. In three weeks' time, Easter and Schroeder moved 78,000 cubic yards of dirt to give the road a 24-foot top on a 66-foot right of way.

Easter and Schroeder came to this Ringgold County job from one in Taylor County, where they moved 35,000 cubic yards of dirt on a two-

mile stretch, completing the job in six 11-hour days.

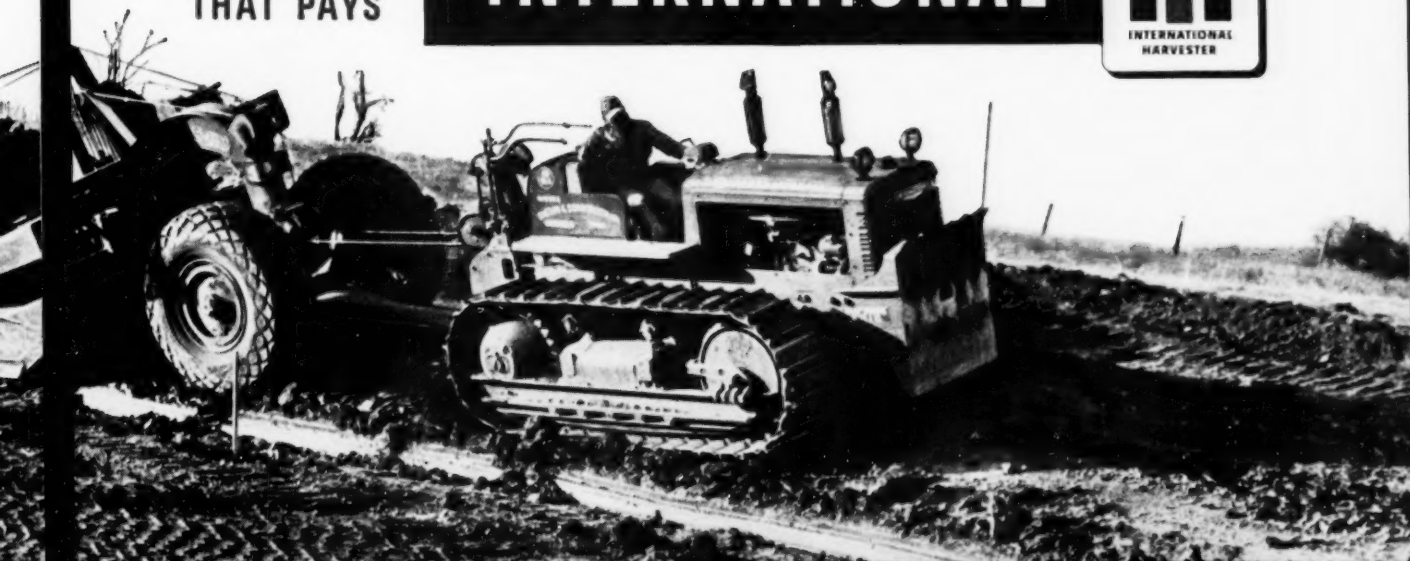
"After 25-years' experience working in dirt, we settled on a crawler fleet one hundred per cent International," say these contractor partners. The fleet now consists of six International TD-18As with scrapers and 'dozers and a TD-14A with tamping roller.

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Contractor Builds Bridge Substructure Units in Drydock Before Floating to Site

» EIGHT huge caissons of reinforced concrete that will be used by Merritt-Chapman & Scott Corp., A.G.C., New York, in constructing deep water piers for the 3-mi. New York State Thruway Bridge across the Hudson River between Tarrytown and South Nyack are rapidly nearing completion in the "world's largest natural drydock" 10 mi. north of the bridge site.

The eight buoyant "boxes," the largest of them half the size of a city block and weighing 15,000 tons, are being built by the Corbetta Construction Company, A.G.C., New York, under subcontract to M-C&S. The construction site is the same natural drydock formed by a worked out clay-pit on the west bank of the Hudson near Haverstraw, N. Y., where the three famous substructure sections for New York City's new Pier 57 were built last year by Merritt-Chapman & Scott and Corbetta. Upon their com-

pletion, the pumped out basin will be reflooded, the river embankment will again be breached, and the eight boxes will be towed 10 mi. downriver for placement at the bridge site.

With construction of the boxes underway upriver, other foundation work is moving forward along the 3-mi. bridgeline. The substructure of the project, being built for the New York State Thruway Authority with Madigan-Hyland serving as consulting engineers, is being built under four major contracts awarded to date—two to Merritt-Chapman & Scott and two to Construction Aggregates Corp.

Foundation Work Described

Under one contract, M-C&S is building foundations for 10 twin-shafted piers on the easterly side of the river. Under the second, it is building foundations for 13 deep water piers which will carry the bridge west of the main channel, including those

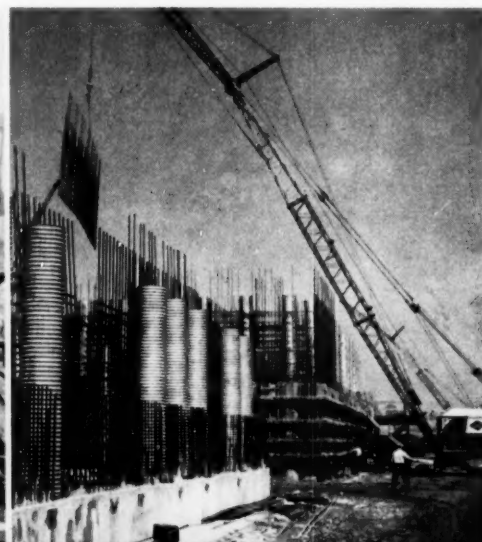
LEFT: Airview of natural drydock site on west bank of Hudson River where eight giant caissons of reinforced concrete are under construction as foundations for deep-water piers of New York Thruway Bridge.

RIGHT: Close-up of the eight boxes in various stages of construction. Piles will be driven through the galvanized iron sleeves being built into the boxes to anchor the caissons to bedrock at the bridge site.

supporting its central 1,200-ft. span and flanking spans of 600 ft. each. On the western side of the river, Construction Aggregates is building 165 timber-pile-supported concrete-capped pier foundations on 50-ft. centers.

Cofferdam construction, two to a pier, is being used for all Merritt-Chapman & Scott piers except those four supporting the central and flanking spans and the four immediately to the west. Solid rock is too far below the surface at this point—230 to 300 ft.—to be used effectively and economically for pier support, and the air-filled caisson design was evolved as a solution. Emil H. Praeger of Madigan-Hyland designed the boxes.

LEFT: Welding crew works on prefabricated mat for caisson wall reinforcement. Bars are arranged on time-saving, job-built, notched angle-iron jig. Then, about one in every five bar intersections is tack welded. RIGHT: A Lima 802 crane hoists one of the reinforcing mats into place in caisson wall. The mats needed for a complete pour are tack welded together to give stiff reinforcement.



HEAVY • RAILROAD

On completion, the 40 ft. high "boxes" will be floated into exact position and sunk atop a specially prepared blanket of sand and gravel by filling them with water. When in position, their tops will be approximately two ft. below the surface at mean low water. Piles will then be driven to bed rock through wells in their walls to pin them permanently into place. As construction of the superstructure adds dead weight thrust on them, the water will be pumped from the boxes to effect the desired buoyancy. It is estimated that their buoyancy will support 80% of the dead load, with the piles supporting the balance, plus all the live load.

Checkerboard Template Used

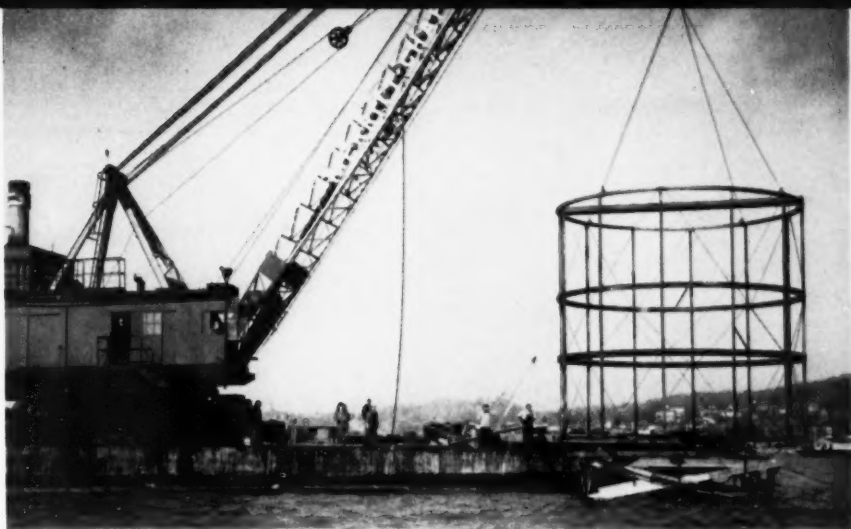
Driving of piles for the M-C&S cofferdam piers is being speeded by a job-devised "checkerboard" template. Foundations for the 10 easterly piers are being built within 29-ft. inner diameter circular cofferdams, two to a pier on 64-ft. centers. After initial excavation to -26, prefabricated circular bracing 26 ft. high is positioned atop temporary falsework and is then lowered into place preparatory to placement of the sheet piling, which is driven to -53.

With the cofferdam completed, a "checkerboard" template fashioned of 8-in. by 6-in. H beams topped by 1/4-in. plate to match the diameter of the cofferdam is lowered atop the upper wale of the bracing. Slots in its face indicate exact placement of each of the forty-seven 14-in. beams that are then driven to rock. As of early June, 17 of these 20 cofferdams had been placed, with nine driven and ready for concreting. Tremie seals, placed atop a 2-ft. bed of sand, will be 6 ft. thick, from -24 to -18, with piles cut off at -15. The 29-ft. diameter foundation will then be brought to -2, where it will be cut back to an 8-ft. by 12-ft. key extending 2 ft. above the mean low water.

Preparation for "Boxes"

The remaining five M-C&S piers to be built by cofferdam method, two to the east of the "boxes" and three to the west, will use cofferdams 35 ft. in diameter, with 56 bearing piles each. Construction otherwise will be substantially the same. Merritt-Chapman & Scott currently has seven floating derricks and a concrete mix plant at work on the river.

Pending arrival of the mid-river "boxes" from upriver, work is going



At the bridge site, a 26-ft.-high prefabricated bracing system is lowered atop falsework for one of the 29-ft. diameter circular cofferdams used by Merritt-Chapman & Scott for construction of easterly piers for the New York Thruway Bridge across the Hudson River.

forward on construction of the fender systems and icebreakers for their piers. In each instance, one side of the fender system is being left out so that the boxes can be moved in and moored exactly in position preparatory to sinking.

The "boxes" under construction by Corbetta at the Haverstraw "drydock" vary appreciably in size. The two for the main piers are 100 x 190 ft. and 35 ft. high. The two for the flanking piers are 77 x 124 1/2 ft. and 30 ft., 9 in. high, while the four smaller ones are 56 x 110 ft. and 32 ft., 10 in. high. Before they are sunk into position at the bridge site, M-C&S will add another concrete lift to bring all to a uniform height of 40 ft.. If this were done at Haverstraw, the boxes would draw too much water to navigate the channel.

The caissons will weigh from 4,700 tons to 15,000 tons each and are divided into compartments. In each box there is a sump for pumping out seepage and weep holes to connect the compartments.

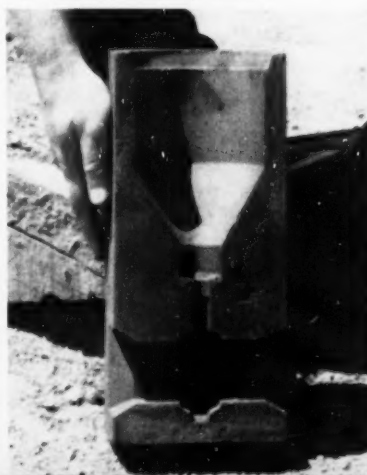
Half of one of the two-section molds used in the unique Thermit butt-welding process. Thermit compound is poured in the top funnel-shaped part, which is plugged by a steel disc at the bottom. After Thermit is ignited, it melts the disc and flows down into the gap between the bar ends. The short pipe sleeve at the top of the mold is to increase the mold's capacity to 8 lbs. of Thermit, the quantity used for 2-in.-sq. bars.

The base slab of the boxes is about 2 ft., 3 in. thick and exterior walls are 2 ft., 10 in. thickening to 3 ft., 9 in. at the vertical sleeves for the piles.

A major factor in speeding the work on the project was the pre-construction planning and layout of the job-site. Most of the original foundation prepared for construction of the Pier 57 boxes is being used, but an additional 50,000 sq. ft. was built. The casting bed, or the foundation upon which the boxes are being built, is 30 ft. below low water level in the Hudson River, and covers an area approximately 300 x 850 ft. in the center of the basin.

Reinforcing Mats Built

To assure smooth, uninterrupted work schedule, Corbetta laid out an area 300 x 300 ft. at the south end of the basin where huge reinforcing mats are fabricated. The mats range in size from 25 to 50 ft. in length, and 15 to 18 ft. in height. They weigh from one to three tons. At the north end of the site, specially designed



HOW TO HANDLE WET JOBS

#19 of a series

BRIDGE PIER COFFERDAM

Winona, Minn.

Contractor: James Construction Co.



BEFORE DEWATERING. Earth cofferdam is shown around damaged and tilted center pier of bridge which had been washed away by Mississippi Spring floods. Griffin Wellpoint system (see photo, right) has 640-ft perimeter.



WITHIN 12 HRS, the 2 pumps have brought water below subgrade, wresting 5000 gal per min from the very coarse sand and gravel.

IN INSTALLATION, the wellpoints on this job had to be driven the last few feet, through gravel. Fortunately, Griffin's is the only point specifically designed for driving as well as jetting. Contractor was thus enabled to "breeze through" what might otherwise have proved a big headache.

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In Canada: Construction Equipment Co., Ltd.
Toronto Montreal Halifax

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wood forms are built in sections up to 12 ft. high and 34 ft. in length. They were designed to be reused as many as eight times.

With eight large cranes on the job the reinforcing mats and wood forms are carried easily and quickly from each end of the basin and fitted in place. This makes possible pours of up to 900 cu. yds. per day.

Two examples of the construction ingenuity adopted in construction of the caissons are the use of Thermit welding for the largest of the reinforcing bars, and three job-built traveling scaffolds which eliminate the necessity of cumbersome scaffolding around the huge boxes.

Believed to be the first time used on a construction project, the Thermit welding process was adopted to butt-weld the 1¼ and 2-in. square steel bars used in the ribs of the base slab for each box. The process offered two advantages. First, it was less expensive than the extensive power system that would have been required for an electric-welding operation. Second, the Thermit method proved to be virtually fool-proof, resulting uniformly in high-strength butt-welds. Test welds usually proved stronger than the reinforcing bar itself.

Corps of Engineers Shift

The Army post of Deputy Chief of Engineers has been abolished, and two new deputy posts created to "permit a division of the supervisory workload formerly held by Maj. Gen. Bernard L. Robinson as Deputy Chief of Engineers."

Maj. General Samuel D. Sturgis, Jr., Chief of Engineers, announced the new positions of Deputy Chief of Engineers for Construction, to be held by Gen. Robinson, and Deputy Chief of Engineers for Military Operations, to be held by Brig. Gen. Albert C. Lieber.

Gen. Robinson now will supervise military construction and engineering; civil works construction, engineering and operations; and safety, real estate and legal functions.

Gen. Lieber will supervise military operations, supply and procurement, research and development, nuclear power, mobilization and operational planning, intelligence and mapping, organization and training of troop units, training of individuals, and personnel administration.

Career Man Gets BuRec Job

Wilbur A. Dexheimer, a career engineer with the Bureau of Reclamation, got the nod from President Eisenhower for Commissioner of Reclamation last month after the prior recommendation of Interior Secretary McKay for appointment of Texas Consulting Engineer Marvin Nichols backfired at the White House.

An employee of the Bureau since 1928 except for four years in the



Mr. Dexheimer

Corps of Engineers during World War II and brief service with a construction firm, Mr. Dexheimer is a native of Denver, attended the University of Denver and received a degree in civil and irrigation engineering from Colorado A & M College. His principal

war service was in China, for which he was awarded the Bronze Star and the Chinese Order of the White Cloud.

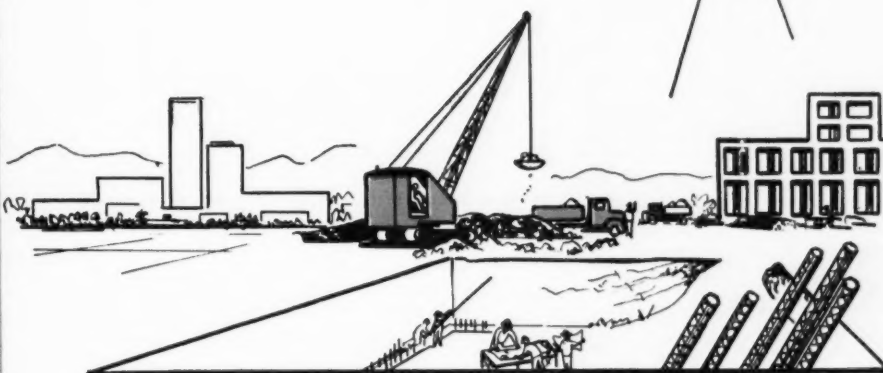
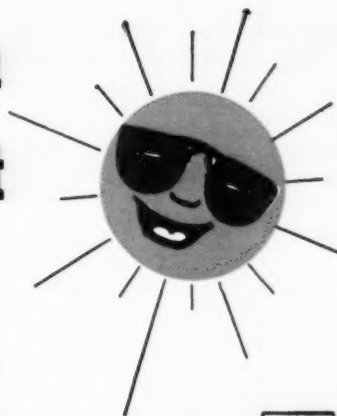
After discharge as a lieutenant colonel, Mr. Dexheimer was a consulting engineer with Morrison-Knudsen International Co. and assistant chief engineer in railroads, highways and ports in China until 1947 when he returned to the Bureau as assistant chief engineer of construction.

Appointment of Mr. Nichols had been held up since his recommendation by Secretary McKay in May (June CONSTRUCTOR), due to his service with the General Services Administration in helping supervise operation of the controversial government-owned Nicaragua Nickel Plant in Cuba.

Secretary McKay "reluctantly" withdrew Mr. Nichol's name at the request of the latter who wrote, "The White House staff indicates that my service at Nicaro, although the services themselves were of a high order, having been rendered under a previous administration might at some later date be embarrassing to the present administration should I be appointed."

Newspaper reports stated Mr. Nichols' appointment was blocked by C. D. Jackson, former publisher of *Fortune* magazine, now special assistant to the President. The June issue of *Fortune* carried an article entitled, "Who's Going to Clean Up Nicaro?"

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Toll Road Measures Approved in Sixteen States Over Opposition

- Lawmakers Advance Many Superhighway Projects
- Newly Created Authorities Plan More Toll Routes

» **CONTROVERSIAL** arguments for and against the toll method of financing needed highway construction were heard throughout the land again this summer as state legislators debated whether to approve or reject toll road projects.

Advocates of toll financing saw enactment of legislation in 16 states which will pave the way for new or additional construction. Proposals are still pending in two other states and toll projects were rejected in six others.

Johnston Pushes Toll System

In Oklahoma, Governor Johnston Murray, a toll road enthusiast, has stepped into a torrid legislative debate over proposed projects. Bills authorizing more than 400 mi. of turnpikes to Kansas, Missouri and Texas borders, all connecting with the recently completed Turner Turnpike, are provoking the controversy.

Claiming that the new roads would ruin towns on "free" roads, the Oklahoma Free Roads Association is attempting to force the issue into a referendum. The governor has taken to writing weekly comments for the press to beat the opposition and is airing his arguments for the toll roads over a number of radio stations.

In other states, proposals for toll turnpikes have been approved and are on their way to their construction stage. Construction of new or extended toll facilities is currently under way in Connecticut, New Jersey, New York, Ohio, Pennsylvania, West Virginia and Maine. Other projects are in various stages of preparation, planning and study.

Connecticut legislators approved a bill authorizing construction of the Fairfield County Thruway, a superhighway crossing the state from the Rhode Island border to the New York border where it would connect with the New York Thruway. Toll charges are expected to repay cost of the \$213-million project. A provision was attached that if tolls do not prove sufficient, state gasoline taxes may be used to amortize the bonds. The approved

settlement climaxes a two-year fight over the route of the road, parts of which are already under construction.

Also enacted in Connecticut was legislation calling for continuance of toll collections on the Merritt Parkway and Wilbur Cross Parkway after the bonds for those projects are paid in full, as a means of providing additional revenue for highway construction elsewhere in the state.

Florida lawmakers enacted legislation providing for creation of a five-man State Turnpike Authority to plan, finance, build and operate a toll superhighway to run northward 110 mi. from the vicinity of Miami to Stuart or Ft. Pierce. Cost of the route is expected to approximate \$96 million. Officials hope to see the highway extended eventually to Jacksonville.

Illinois enacted bills providing for creation of a three-member State Toll Road Commission to finance, build and operate a system of toll superhighways in the state. The legislation appropriated \$500,000 to pay the commission's operating expenses and salaries over the next two years.

Indiana Pike Approved

In Indiana, the route for a \$165-million toll highway across the northern part of the state has been finally approved. The proposed road will connect the Ohio Turnpike to Chicago. Contracts for the two-year job of building the 150-mi., four-lane expressway are expected to be awarded next spring.

Preliminary estimates have been made for a turnpike in Kansas which probably would run from Kansas City to Wichita through Topeka. A new seven-man State Turnpike Authority created this year is studying the feasibility of such a route.

First construction contracts for a 66-mi. addition to the Maine Turnpike are expected to be awarded in August. The road will be run from Portland to Augusta at a cost of about \$55 million.

Announcement by the Massachusetts Turnpike Authority of plans for the route of its projected \$200-million

east-west toll superhighway are being awaited at this time.

The Michigan legislature has authorized appointment of a State Turnpike Authority and empowered it to issue bonds for construction of toll roads between Detroit and Chicago and Bay City and Toledo. Use of \$500,000 from State Highway Department funds was also approved for studies and planning of toll roads.

New toll road laws in New Hampshire authorize bond issues to finance building of a \$23-million Central New Hampshire Turnpike and a \$13.5-million extension of the present Eastern New Hampshire Turnpike.

\$150 Million for Parkway

The New Jersey Highway Authority last month sold \$150 million worth of serial bonds to finance construction costs this year on the 165-mi. Garden State Parkway. Sixteen sections are now under construction on the \$285-million project.

In New York, the State Thruway Authority reports that an additional \$150 million will be needed to complete the 535-mi. superhighway network. The last contracts on the 427-mi. main stem have been let, but the body is committed to construct four feeder routes totalling another 108 mi. as well as a 5-mi. link with the New Jersey Turnpike.

Contracts are being let now for work on the 241-mi. toll highway to cross Ohio. An administration-backed statewide toll authority bill enacted in Texas gives priority to a proposed Dallas-to-Fort Worth turnpike which would cost an estimated \$30 million.

Toll Roads in Washington

New laws in Washington broaden the powers of the State Toll Bridge Authority to permit it to finance toll roads in much the same manner it now constructs toll bridges. The authority will study feasibility of a toll highway from Tacoma to Everett by way of Seattle and \$500,000 was appropriated for that purpose.

Wisconsin's Governor Kohler has appointed a five-man commission to study and construct, if found feasible, a cross-state toll highway from the Minnesota border to the Illinois border. Such a project would cost about \$200 million.

A Connecticut engineering firm has asserted the feasibility of a Richmond-Petersburg toll road in Virginia and estimated that the 35.3-mi. highway would cost \$57 million.



New York City's newest stretch elevated highway passes under the Manhattan Bridge with plenty of clearance. Concrete pouring on the \$11-million job follows close on the heels of steel erection. Buggies carry mix from the hoist to forms.

»THE steel skeleton of an \$11-million elevated highway link is extending southward under the Manhattan and Brooklyn bridges in New York City under the direction of Bethlehem Steel Co., subcontractor for steelwork to the Fehlhaber Pile Co., New York.

Completion of the 1.61-mi. South Street Elevated Highway this fall will also leave only two more miles of road to be constructed to encircle the island of Manhattan with an express dual highway. When this last 2-mi. gap along the Harlem River is built sometime in the future, motorists will be able to drive 24 mi. around the perimeter of Manhattan almost without traffic lights.

In spite of traffic congestion, construction men report the erection of the steel superstructure, begun in March, has progressed with surprising smoothness. They credit this to all around cooperation extended by traffic policemen and business people in the area.

New Funds for Ohio Roads

Ohio's state legislature last month gave final passage to bills which will provide an additional \$43 million for highway construction and approved for submission to the voters a proposal for \$500-million construction bonds.

The lawmakers expect that the \$43 million will come from their new axle-mile tax on trucks and a one-cent increase in the gasoline tax. The proposed \$500 million worth of highway bonds would be issued over a four-year period and retired by revenue from the axle-mile tax.



Elevated Highway in N. Y. C. Nearly Done

Even long girder spans, which ranged from 70 to 120 ft. in length, were trucked downtown from a Hudson River terminal during heavy morning traffic without difficulty. Some of the girders are 8½ ft. high.

Shift Working Hours

Another interesting example of co-operation on the job stems from the Fish Market operations. Since the fish merchants need the street space badly until noon, the steel erection crews agreed to start work at noon when erection reached the Fulton Street neighborhood. With the help of daylight saving time, the steel men were still able to get in 8 to 9 hours' work before nightfall.

In discussing progress of the work, Borough President Robert F. Wagner, Jr., said, "I am very proud of the coordinated manner in which the construction job has proceeded. Our engineers, the Fehlhaber Pile Co., and Bethlehem Steel Co. have succeeded in planning a construction schedule which makes this one of the smoothest and cleanest construction jobs in the city."

Work Began in 1949

The first physical work on the highway started in 1949 with the taking of borings to determine sub-soil conditions. The conditions varied greatly from footing to footing due to the miscellany of types of fill such as rock-filled cribs used to build up the waterfront as it encroached on the East River through the years.

Steel 14-in., 117 lb. H-piles were driven to rock depths ranging from 35 to over 200 ft., with reinforced driving ends formed to a blunt cutting edge. Footing requirements totaled 9,000 tons of H-piles as follows: 140,000 ft. of 14-in., 117 lb.; 11,000

ft. of 14-in., 73 lb.; and 3,600 ft. of 12-in., 53 lb. The number of piles per footing varied from 3 to 11, with concrete caps and billets varying from 3½ to 5½ in. thick without grillages.

The 90-span superstructure, containing 15,582 tons of steel and requiring 187,764 rivets, is 7,663 ft. long. It is a two-column per bent structure, 35 ft. transversely between columns with 18-ft. and 22-ft. cantilever overhangs. Two lines of girders rest directly on double columns similar to those of the West Side Highway. Proceeding at the rate of a span a day, erection of the steelwork, except for railings, was scheduled for completion August 27.

Structure 75 Ft. Wide

The viaduct is 75 ft. wide, with two 33-ft. roadways separated by a 4-ft. center mall as a safety feature. The remaining 5 ft. are shared by two safety walks, one on each side of the viaduct, with handrail.

The pavement is 1½ in. of asphalt without binder laid directly on a screeded and broomed concrete slab 8 in. thick. The concrete men were unable to hoist concrete with a crane on South Street because of traffic. A tower with hoist was therefore used at various locations, with 11 cu. ft. capacity gasoline-driven buggies conveying the concrete to pouring site.

The original purpose of this extensive highway development, begun a quarter-century ago, was to relieve traffic congestion in the affected neighborhoods of the world's largest city (population: 7,800,000). Its value is illustrated by the fact that the West Side Highway handles a total of 99,000 vehicles during a 24-hour week-day period. At peak load, 7,029 vehicles pass over the highway an hour.

GM DIESEL
CASE HISTORY NO. 1A5-40

OWNER: Flomaton Gravel Company,
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INSTALLATION: GM 4-71 Diesel powers
a Pekor 6" centrifugal pump on
sand dredge. Pumps 400 to 450
feet to discharge table with
40-foot head. Engine replaced
another make Diesel in 1947.

PERFORMANCE: Owner reports
repowering boosted production
50% with no increase in fuel
costs. He now pumps 35 to 40
cu. yds. per hour, operating
8 hours a day, year around.
GM Diesel has required
no repairs in six years.



PUMPS 50% MORE SAND USES NO MORE FUEL

After seeing what this engine did, Owner A. R. Bethea powered two other dredges with General Motors Diesels. Besides being steady, dependable producers, GM Diesels' compactness and lighter weight permitted him to build lighter and less expensive dredges.

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» THE Houston Chapter of the Associated General Contractors of America, in cooperation with the University of Houston's College of Business Administration, will conduct a superintendent's training course this fall at the university.

According to Carl A. Schneider, chairman of the chapter's supervisory training committee which developed the course along with Emory E. Gose, Jr., and the safety committee, the purpose of the program is to take promising men from each contractor's organization and help them to become better superintendents.

Contractors' Men Teach

In announcing the chapter's entry into the field of practical education, Mr. Schneider pointed out that no outside experts would be brought in to teach the classes. Each of the 13 instructors who will handle different phases of the technical classes is a local industry man who is known to be an expert in his particular line. All are with A.G.C. firms.

The ten-week course will start on October 10 with classes to be held from seven to nine p. m. each Monday and Thursday evening in Oberholtzer Hall, on the campus of the university. Enrollment blanks for the course have been mailed from the chapter offices to each active member. It is pointed out in the mailing piece that enrollment in the course is limited to 40 persons on a first come-first served basis.

One-Two Preference

The committee wishes to have as many active members as desire have their superintendents attend the classes and consequently has set up a one-two preference on the enrollment blanks. An active member may submit two men for enrollment, both of whom will be accepted if the number of enrollees permits.

The university charges a nominal fee for use of its facilities of \$30 per person. Instructors will serve without pay. The course itself will cover the broad field of the construction industry and its problems but the majority of the periods will be devoted to specific building construction techniques and problems.

In the opening class on October 5 chapter president Demmie H. Cox, of Texas Gulf Construction Company, will cover the history of the construction industry and the duties and responsibilities of superintendents. On October 8, Fred Fisher, of Fisher Con-

Houston Chapter Will Sponsor Supervisory Training Course

- Classes To Be Given at University of Houston
- Instructors Drawn From A.G.C. Member-Firms

struction Company, will be the class instructor on job organization and administration covering such topics as inspection and progress reports, daily job history and key personnel procurement.

Job records, including time records, W-4 forms, cost distribution, purchase orders, delivery sheets, change orders and job back charges, will be the class topic for October 12 with Lee Blocker, of Farnsworth and Chambers Company, Inc., as instructor. Joseph Fry, of Harold Van Buskirk & Company, Inc., will be the instructor on October 15 with job layout as the topic. He will go over such subjects as site control and bench marks, location of temporary structures and storage areas, drainage during construction and location of equipment, form yard and hoist mill.

Rights and Liabilities

The instructor for the October 19 class session on foundations will be E. A. Fretz, of Fretz Construction Company. The rights and liabilities of owners, contractors and adjoining owners, the reading of survey plans and the determination of soil conditions, tests and samples will be covered.

Excavation will be the topic on October 22 with A. R. Mandein, of W. S. Bellows Construction Corporation, as instructor. Two class sessions will be devoted to form work with C. A. Bullen, of Manhattan Construction Company, as instructor. The October 26 meeting will feature form construction and the October 29 meeting, form erection.

Material placing of concrete will be the topic at the November 2 meeting with E. A. Kruse, of Tellepsen Construction Company, discussing such topics as testing, plant layout and mixing, methods of placing and equipment, curing and protection and slip form and tilt-up construction. Homer Peterson of Peterson Bothers Steel Erection Company, associate chapter member-firm, will discuss reinforcing and structural steel at the November 5 meeting, covering such topics as shop details, schedules and delivery, equipment and layout and erection of both reinforcing and structural steel.

Subcontracting Field

Louis Fisher, of Fisher Construction Company, will be the instructor on November 9 with masonry work as the subject. Carpentry and millwork will be the class subject on November 12 with P. C. Adams, of Tellepsen, as instructor. Russell W. Nix, of Hubbard Construction Company, will cover the field of subcontractors and materials on November 16 including such things as subcontract agreements, coordination of subcontractors, material orders and protection of work.

Mr. Gose, of Tellepsen, will be the instructor in two sessions on November 19 and 23 devoted to accidents and safety. He will cover such subjects as the cost and analysis of accidents, workmen's compensation, legal and public liability, methods of making a job safe, work of the safety engineer, reminders and contests and planned safety programs.

The last two classes will be taught by Dr. Virgil L. James, of the University of Houston, and will deal with employee and human relations. Dr. James will speak on dealing with labor unions, union regulations and state and federal labor laws on November 30. On December 3 the human relations program will include getting along with employees, leadership qualities and handling disputes and grievances.

Graduation for the class is scheduled for December 7 with each superintendent successfully completing the course receiving a certificate.

Other Programs to Follow

Articles on supervisory training being sponsored by other A.G.C. chapters will be printed in future issues of THE CONSTRUCTOR. Chapters that have not already done so are invited to send THE CONSTRUCTOR descriptions of superintendents' courses being conducted under their sponsorship.

Professional Status For Contracting

By Harry L. Conrad

Chairman, College Relations Committee, Michigan Chapter, A.G.C.

(The following are excerpts from an address given recently at North State College, Raleigh, N. C., by Mr. Conrad.)

» CONSTRUCTION is a field in which the calculated risk must be properly evaluated. When estimating and bidding a job, the bidder must have the courage of his convictions, based on experience, to undertake the obligation of driving the job to a profitable conclusion. He must have the fortitude to live up to his obligations even in the face of major losses. If he cannot perform economically he will fail. Engineers with proper training stand a much better chance of success than a less educated man with long practical experience but no technical training. When I refer to experience I do not refer to time, but to the amount of effort put forth in successful accomplishment. Personal sincerity does count.

Construction must not be confused with manufacturing as a field of human endeavor. In construction the normal procedures and the ethical and economic problems of the work are widely different. I do not mean to imply that the basic principles of sound, orthodox business accounting and personal integrity are not common to both but the sales approach, the evolution of contractual relationships and execution of the work are so very different that even the laws, rules and regulations of one cannot be applied rationally to the other.

Basic Differences to Consider

The problems of union labor relations, rates of payments, codes of safety, comfort and employee welfare must be approached from a different angle; one which recognizes the basic differences in contractual relations, working conditions, weather and many other practical considerations not held in common with manufacturing.

That is why any study you make of contracts and contract procedures is not purely a matter of law. Precedent and accepted standards of practice must be taken into consideration as well as rational interpretations of "impossible to perform"

clauses which many would-be "smart" individuals may try to incorporate in specifications to "hook" a contractor or force him to give "something for nothing."

The ramifications of a possible curriculum for collegiate study on that entire subject are so many and so varied as to appear to complicate the educational approach. All too many courses appear to develop the idea of training men to be executives with too much emphasis on the psychological approach. There is a need for more effort directed toward guiding the student along practical and commercial lines leading to a clearer understanding of what construction achievement constitutes. The students need to be better grounded in the basic knowledge of how work can and should be carried on in the most efficient way. We need engineers who are willing to admit that they do not know enough to be boss, but are willing to try for the job!

Intent of A.G.C. Approach

The American Society for Engineering Education has been doing a wonderful job but their efforts have been devoted toward the creation of properly trained professional engineers with emphasis on research and teaching. The A.G.C. approach does not differ in principle but is intended to lift contracting from a quasi-professional status to full acceptance as an honorable profession.

We in the construction business are fully cognizant of our shortcomings and needs. That is why we need the mental stimulus and fresh approach to the solution of our problems which can come from properly trained construction engineers.

Please understand that we advocate no lowering of engineering standards in training but rather we hope to start with a graduate engineer as a basis for the supplemental training to produce an accredited construction engineer with professional status.

There are admittedly several courses of study that a professional civil engineer must take but some of those studies could be made elective and others substituted to give better

direction to the work of training a professional construction engineer. Your construction curriculum here has obviously been designed by men who know construction, but apparently the four-year curriculum does not lead to a fully accredited degree as a civil engineer. That recognition is merited, as is provided at North Carolina State at the close of a fifth year of professional study.

Certain other schools with which I am more familiar, such as the University of Michigan, provide a four year curriculum with applied construction options leading to a civil engineering degree. A graduate course of study is offered in the fifth year emphasizing construction engineering. Michigan State College at East Lansing, Michigan, is currently planning a revision of its civil engineering construction courses along this line, I believe.

Need for Specialized Training

But what I am endeavoring to do is not give you a review of any school of engineering but rather to emphasize the specialized training required to fit the young engineer for work in the field of construction as differentiated from other fields of engineering, research, design or teaching.

So many subjects are required in basic college work that the embryonic engineer in most schools really has only the last two collegiate years in which to specialize for the degree of his choice and then usually he has so many subjects that he gets mental indigestion or does not get a thorough understanding of the value of each subject, in relation to the final objective of his education. It has been suggested that many of the subjects in the basic college curriculum could be taught in a junior college to produce well rounded graduates properly trained and qualified to intelligently enter the normal field of business enterprise, aside from the professions.

The graduate schools of engineering could then set up curriculums that would give selected students more hours in the technical phases of their professional training. The student would also have more time for field experience to familiarize himself with the practical customs, labor relations, jurisdictional setups and even the vernacular of his chosen profession. His perceptions and understanding would be stimulated and he would be better qualified and able to direct or

handle work with a background of practical contacts and experience. He would serve sort of an internship like that of a doctor. Credits could be given him toward graduation for that extra curricular effort.

A wide field is open for estimators. Good estimators are not being taught in school. Most of them must learn from constant practice and experience in the active competitive field. I'm not referring to quantity-survey, although that too is a neglected field of training. What profits an engineer if he has the basic knowledge to design a structure but cannot explain to any average tradesman how to go about building it? It requires sound engineering and practical experience to economically design form work, yet few college graduates seem to have the ability to make a detailed drawing for the formwork required in concrete construction, much less to establish any data or probable costs. More and more engineering students need training on how to buy materials and services from others, with a sensible knowledge of commercial values. More and more engineers need basic knowledge of accident prevention and worker protective methods.

Builders Award 1953 Prizes

The Master Builders of Iowa, A.G.C. chapter whose scholarship program is now in its third year, has announced the award of two \$500 scholarships for 1953.

The Iowa State College award went to Robert H. Templeton, 29, of Belle Plaine, Iowa, an architectural engineering student. Guy Ramsey, 27, of Pleasantville, Iowa, a student in civil engineering at the University of Iowa, received the other award. Both students are married.

Mr. Templeton, who has two children, is a veteran of 31 months' service in the Seabees. Mr. Ramsey was brought up in a construction atmosphere, his father and grandfather having been bricklayers. Both are serious, hard working students and expect to enter the construction industry upon graduation.

Collaborating with faculty members in the selections were members of the chapter's education and scholarship committee: Chairman, W. A. Klinger, Sioux City; D. H. King, Spencer; Harold Neumann, Des Moines, and W. A. Priester, Davenport.

THE CONSTRUCTOR, AUGUST 1953

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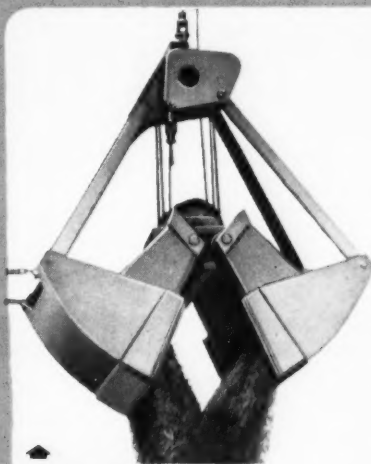
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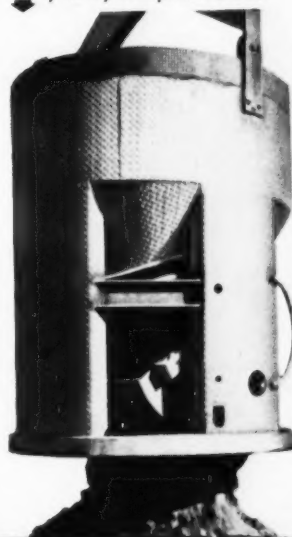
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Order No.	Amount	Cost	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	36a.	37.	38.	39.	40.	41a.	41b.	43. Price List and Samples <input type="checkbox"/>	Price List and Styles of Emblem <input type="checkbox"/>	TOTAL COST		
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Make Checks payable to CONSTRUCTION FOUNDATION, A.G.C., Munsey Building, Washington 4, D. C.

Gentlemen: Enclosed find check for \$_____ for which please send materials as ordered by number herewith.

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August 1953

(EDITOR'S NOTE: This article is based on Mr. Du Pont's address before the Connecticut Safety Society, April 23, in Bridgeport. The author, who is director of the Employee Relations Department of the E. I. du Pont de Nemours & Co., stressed that the worker must intentionally practice safe job habits if any accident prevention program is to be successful.)

» ALL of us recognize that the primary purpose of the safety movement is humanitarian—the protection of life and limb, and the prevention of avoidable accidents.

But there is more to safety than humanitarianism. Accomplishment in this field brings benefits far beyond those detected by casual examination, and the results, therefore, are among the most satisfying that we can experience.

There can be no question that much has been accomplished in safety over the past several decades. However, when we look at the appalling waste from accidents in this country, we can not sit back with any degree of self-assurance that all is well or can we afford to relax our efforts one iota.

Now how do we promote safety? We have laws, regulations, rules, drills, training appliances and protective clothing. All these are of value, but it seems to me that in the last analysis, safety must be achieved in the minds of men.

A Will for Safety

In saying this, I do not attempt to minimize or underestimate the importance of rules and their enforcement. What I am trying to emphasize is the vital essential—the creation of a will for safety. We will never be safe unless we want and try to be safe. This applies to all of us—management, employees and the general public.

Let me illustrate by citing the results of an accident survey made by one of the largest bus lines in the country. Without going into statistics, this survey showed that most accidents happened—not near the end of runs, when the drivers were sleepy or fatigued—but at the beginning of the runs. In other words, the drivers were presumably at the peak of their physical and mental efficiency when the crack-ups occurred. The bus line's experience is a convincing indication that a will for safety is essential—and it must not be distracted by other thoughts, such as the family argument at the breakfast table.

Safety Is a State of Mind

By Emile F. du Pont

Chairman, National Safety Council

I believe it is evident from statistics that the manufacturing industry in the United States rates high in safety performance in comparison with other segments of our society. Perhaps the reason is that more time and effort is devoted to implant in the workers a will for safety.

Stress on Preventive Safety

At Du Pont, it is the general policy to have the plant manager serve as chairman of the local plant central safety committee because we think this is further proof to our employees that management means what it says when it asks them to work safely. The line organization works through safety committees in various operations. It is important to see that our wage-roll people have substantial participation on these committees. We believe strongly in the philosophy of preventive safety rather than after-the-fact correction. Great stress is placed upon safety violations rather than upon injuries as such. We are tough on willful violators, as we are more interested in eliminating the chance for injury by working safely without violations of good practice than in setting records. If we are reasonable but firm on violations which do not result in injury, a safety consciousness is gradually developed among the entire work force.

When injuries do occur, painstaking investigations are made by the safety committee in the area involved. Since such a committee usually includes wage-roll people, it is an excellent way to get them to take responsibility for the safety of themselves and their fellow workers. The membership of these committees is rotated periodically as a means of furthering the safety training of all employees and thereby creating in them an alert attitude toward potential hazards.

Safety Is Part of Design

When a new plant or operation is in the design stage, safety engineers of our central safety staff work closely with the design people to make sure that the equipment has every possible safety feature. Before the equipment or plant goes into operation, it is carefully inspected by a committee of the

same people who will be responsible for its operation, and they consider safety as well as other factors.

Experience has proved to us that the maintenance of neat and clean work places contributes importantly to the operation of a safe plant. We go to great lengths to provide clean and neat approaches to our plants, and to provide our employees with modern, neatly kept locker and wash rooms.

We feel that when an employee comes to his place of work through neat and orderly surroundings, he will subconsciously work in a neat and orderly manner. It is the attention to such details, with day-to-day, on-the-job evidence of management philosophy which helps convince our employees that we really mean safety first, and which helps persuade them to practice safety first.

Teaching correct work habits at the outset contributes to efficient operations and avoids the danger that new employees will fall into poor work habits that are unsafe and inefficient.

Explosives Safety High

The manager of one of our Du Pont plants believed that because of the variety of chemical products turned out by his plant, it was more difficult to have a good accident rate than in a plant that did not have so many potential hazards. An analysis of the accidents in his plant over an extended period, showed clearly that they were of the type that could have occurred in any plant. Such as men falling from ladders, or dropping packing cases on their toes, etc. In other words, they were just the garden variety of accidents. What was lacking in this plant was a real will to avoid injury.

It was long ago concluded that safety and efficiency of operation go hand in hand. You can not successfully have one without the other. Thus the mutuality of interest on the part of management and workmen does much to build up a spirit of teamwork which is so important to the success of any business. It contributes to a spirit of confidence and common purpose between all ranks of employees which is so vital to American industry today.

Wheeling Company Awarded Safety Plaque



Byrum Construction Co. Honored

The Byrum Construction Co., of Wheeling, W. Va., was formally presented a plaque for having the best safety record among A.G.C. building contractors with over 500,000 man-hours last year, at recent ceremonies in Wheeling.

W. E. Abbitt, chairman of the A.G.C. of West Virginia's accident prevention committee seated second

from left, made the presentation. Others in the picture are left to right: Standing—Eugene H. Brown, Charleston, executive secretary of the chapter; Paul J. Vensel, secretary and William J. Emeh, president of the Wheeling Contractors Association. Seated—Sidney Byrum; Mr. Abbitt; Donald J. Byrum, company president; and D. Frazier Byrum.

Contractors Receive A.G.C. Safety Awards



In Pittsburgh recently the Constructors Association of Western Pennsylvania presented awards to members who won A.G.C. safety awards last year. Left to right in picture above are: T. B. Reynolds, S. P. Lightholder Co.; A. L. Rupp, Rupp Brothers, Inc.; Carl J. Jacobsen, Carl J. Jacobsen, Inc., presenting awards; R. A. Wetzig, Ferguson and Edmonson Co.; R. C. Swank, Jr., Freeland Construction Co.; and W. A. Kim, Ragner Brothers.

Construction Safety Class

Courses on safety in construction are being conducted in San Francisco public schools this summer.

Students with a purpose are attending these classes to learn about safety habits in their industry.

The students are construction employees—superintendents, foremen and journeymen. Their purpose is to find out why construction accidents happen, how they can be prevented and thereby reduce the cost of accidents in terms of human suffering and money.

Sponsor for this program is a seven-man committee made up of officials from management, labor, safety groups and the San Francisco Board of Education. The classes are being conducted by personnel of the city school system, and since this is a joint effort by management and labor, employers have been urged to encourage their employees to attend.

A.G.C. Participation

First meeting was held May 28 to organize the men into groups so that there could be individual participation in later sessions.

Frank G. Corker, secretary-manager of the Central California Chapter, A.G.C., and a member of the committee, urged contractors in a chapter bulletin to support the meetings. He pointed out that similar courses in other industries have "proved acceptable and profitable." In some instances following the program, firms have recorded a 35-40% reduction in the frequency rate of accidents.

It has been estimated by some that each 10% drop represents a saving of \$12.50 in direct and indirect accidents per employee, he added.

Corps Praises Contractors

The Army's division engineer for the Upper Mississippi Valley praised general contractors doing navigation and flood control work for reducing job costs with a "near perfect safety record" the first five months of this year.

Col. Delbert B. Freeman, St. Louis, said in a public statement June 5 that during this period some 100 contractors working in his division had suffered but one lost-time accident.

They had worked over a total of 600,000 man-hours.

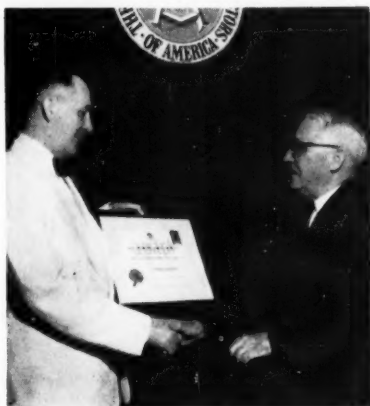
For this volume of work, he added, the national average would have been 24 lost-time injuries, based on Department of Labor statistics covering all types of construction.

"It is particularly significant," Col. Freeman continued, "that 100 different contracting firms should collectively maintain such an outstanding safety record."

Col. Freeman referred to an accident-cost survey by The Associated General Contractors of America in its July 1950 issue of *THE CONSTRUCTOR* which estimated that each lost-time injury costs the contractor \$5,250.

"Based on this cost-per-accident," he said, "the low accident rate for contractors in the Upper Mississippi Valley division must reflect savings in the cost of performing navigation and flood control construction."

Charlotte Firm Third Best



Patten, left, gives award to Whitton

Southeastern Construction Co., of Charlotte, N. C., which placed third last year among A.G.C. members with the best five-year safety record in building construction, was presented the award May 21 at a dinner honoring A.G.C. President C. P. Street.

The award was presented to Earle Whitton, president of the company, by Robert Patten, managing director of the Carolinas Branch. During the presentation ceremonies Mr. Patten said, "The officers of your firm, including the foremen and workmen, are to be congratulated on your contribution to safety in construction."

The company received a similar award two years ago for placing second within the five-year record class.

First-Place Plaque to Seattle Contractor



Winners of A.G.C. Safety Awards

At a recent meeting of the Seattle Chapter of The Associated General Contractors of America awards were presented to firms with the best records last year. The awards were made by the A.G.C. following a nation-wide competition.

Jim Warrack, J. B. Warrack Co., right foreground of picture, is shown receiving a first-place no-lost-time accident award from Winston D. Brown, Howard S. Wright Co., Inc., chapter president.

Other members who received certificates for their safety activities, and guests in the picture include, left to right, Larry Baugh, The Baugh Co.; A. M. Johnson, director, department of labor and industries; Leland W. Garrett, Seattle District, Corps of Engineers; O. B. Daniels, O. B. Daniels and Son; Thomas Armstrong, Armstrong and Armstrong, Wenatchee; and Andy Wick, Wick Construction Co.

California Contractors Get Safety Awards



A.G.C. Members at Los Angeles Meeting

Member firms of the Southern California Chapter of the A.G.C. recently were presented awards for outstanding safety records in construction last year.

Recipients shown left to right above include Robert O'Neil, Fluor Corpo-

ration; J. V. Quinn, Quinn and Conant; Spencer Webb, Webb and White, chapter president; Glen Arbogast, Newbery Electric Corporation, all of Los Angeles; and Paul Terry and Ken Hyde, C. F. Braun Co., of Alhambra.

Eisenhower Calls for New Safety Drive

• Must Stop High Rate of Human Losses, President Tells Durkin

» **PRESIDENT** Eisenhower in June called on Labor Secretary Durkin to "intensify" the work of the President's Conference on Occupational Safety and help reduce the rate of accidents in the nation's workplaces.

"An annual toll of 15,000 deaths and 2 million injuries occurring in the course of employment is an economic and social waste we cannot afford. Such injuries mean a loss to the worker in health and earning power, to the employer in lower production and higher operating costs, and to the nation in manpower skills. Management, labor, and public and private agencies share an obligation to safeguard their fellow citizens employed in the workplaces of the nation. It is appropriate that the federal government provide a means of bringing together these vast resources to curb accidents to workers," the Chief Executive wrote to Secretary Durkin.

Asks States to Help

Mr. Eisenhower asked the states, with their basic authority over the health and safety of workers, to "stimulate and quicken similar endeavors."

The President's Conference on Occupational Safety is a voluntary group of top American business, labor, education and government officials and private safety groups devoted to re-

ducing the high rate of industrial accidents.

Mr. Durkin will serve as general chairman of the conference, with Vincent P. Ahearn, executive secretary of the National Sand and Gravel Association, executive director, and William L. Connolly, who is director of the Labor Department's Bureau of Labor Standards, chairman of the conference Coordinating Committee. An early meeting of the committee is planned.

Durkin Praises Conference

In answering the President's letter, Mr. Durkin praised the work of the conference for reducing injury frequency rates in the nation. He also said that it had stimulated the calling of some 20 Governors' Conferences, many of whose safety proposals are embodied in state laws or practices today.

Last month Mr. Connolly called members' attention to the change in the conference's title from "Industrial" to "Occupational" safety. Some participants felt the word "industrial" related only to manufacturing, he said, while the BLS injury figures used cover all occupations. It is hoped that the change eliminates this erroneous impression, Mr. Connolly concluded.

BLS Surveys Carpenters' Accident Rate

» **CARPENTERS** have more but less-severe accidents than other workers in construction, according to a Bureau of Labor Statistics survey.

In 1948-49, when the study was made, carpenters were found to average 38.2 disabling injuries per million man-hours. The corresponding average for all construction workers that year was 36.7.

These injuries to carpenters resulted in the loss of 4.1 days for every 1,000 man-hours compared with the average of 5 days lost for all construction.

The injury rate for all manufacturing was 17.2 per million man-hours, less than half the rate for carpenters. Likewise, the severity rate in manufacturing was 1.5 days lost per 1,000 man-hours during the same period.

This survey, included in a booklet published by the bureau and entitled "Injuries and Accident Causes in Carpentry Operations," states that specific injury data for carpenters is not available. However, indications are that the spread between carpenters' injury rates and those for all manufacturing workers has since widened rather than narrowed. Presumably, it states, the injury rate for carpenters has followed the all-construction rate which rose to 39.9 in 1949 and to 41 in 1950. While at the same time, the manufacturing injury rate dropped to 14.5 in 1949 and rose only .3% the following year.

Carpenters engaged in highway work had an injury rate of 55.2 against lower rates of 44.8 and 37.8 for those doing heavy and building work respectively.

Chicago Meetings Planned

The A.G.C. Accident Prevention Committee plans two days of meetings in Chicago September 11-12 prior to the Midyear Board Meeting.

These meetings, part of the committee's expanded safety program, will include conferences with a liaison group from the A.G.C.'s Secretaries' and Managers' Council and safety engineers from the Associations of Casualty Insurers. The Board Meeting follows September 14-16.

Listed below are the chairmen of the various subcommittees and the topics they will discuss at the Chicago meetings:

A. L. Jackson, A. L. Jackson Co., Chicago, public relations; G. O. Griffin, Dravo Corporation, Pittsburgh, award standards and accident prevention material in kit for new A.G.C. members; W. E. Abbitt, W. A. Abbitt Co., Charleston, W. Va., cooperation on the local level between A. of C. I. and the A.G.C.

Also, W. M. Goldston, The Goldston Co., Corpus Christi, promoting safety interest of top management and transmitting it to supervisors; Frederick G. Krapf, Wilmington, Del., duties of the contractor and his association; and Ira H. Hardin, Ira H. Hardin Co., Atlanta, a panel discussion of "The Place of Accident Prevention in Construction."

Safety Council Pamphlet

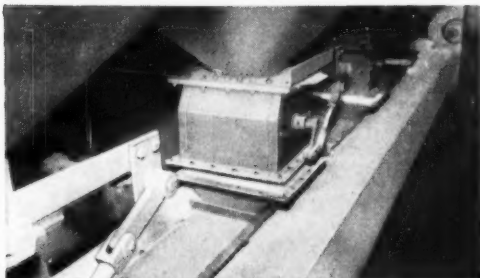
A new monthly publication for construction workers, "The Safe Builder," is being published by the National Safety Council for the purpose of getting across "shirt-sleeve safety advice in shirt-pocket format."

The 8-page booklet is printed in two colors, presenting cartoons, humor and homey philosophy to give workers accident prevention reminders in a form they will enjoy. Further information may be obtained from NSC at 425 N. Michigan Ave., Chicago 11.

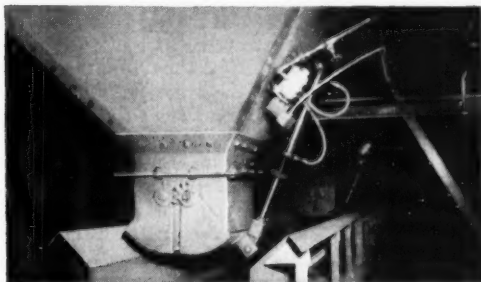
Picture Credit

In last month's issue of *THE CONSTRUCTOR* pictures used in the story on the safety program at the Ohio atomic energy plant were made available through the courtesy of the Division of Safety and Hygiene, Industrial Commission of Ohio.

ANOTHER LEVITTOWN and ANOTHER HELTZEL



Heltzel patented tubular valve eliminates jamming, has pin-point accuracy.



Double clamshell remote control aggregate gate adjustable to control speed.



Levitt's third Heltzel plant promises new concrete batching records for leading city builder.

famous city builder sets third HELTZEL plant into operation at fabulous Bucks County development

Down in Bucks County, Pennsylvania, William J. Levitt, head of the city building firm that bears his name, recently set into operation his third Heltzel concrete batching plant. The fact that his two previous Heltzel plants set record-smashing production records convinced him of Heltzel's ability to produce. In fact, the first plant played a big part in

helping him astound the construction world with his Long Island Levittown. It batched concrete on an average of 1800 cubic yards per day, and on occasion rang up amazing 2,000 yard plus days. His second Heltzel plant was used mainly in the construction of concrete blocks, and untiringly kept pace with the fastest concrete block production on record.

This new Heltzel plant promises even greater things. It's completely integrated—from supply hoppers to conveying equipment to automatic batcher—it's completely designed and built by Heltzel to give Levitt the nation's most efficient concrete batching. Its capacity is an astonishing 300 cubic yards per hour, it's fully automatic with high speed electronic batching that is accurate to the fraction of a pound; the entire operation is controlled from a central control area, and it bristles with many other new Heltzel exclusives that put an end to guesswork and human error in concrete batching.

Portable or stationary, large or small—if you want the finest in modern batching equipment get the Heltzel story before you buy. Heltzel engineers will be happy to work with you in developing just the plant you need for your operations.

The Heltzel Steel Form and Iron Co.

Warren, Ohio



Clean line, all-welded A-frame comes completely assembled, easy to erect.

Another New Installation



» THE Associated General Contractors of Western Kentucky was chartered as the 122nd chapter of A.G.C. in Paducah, Ky., July 16. Presentation of the charter was made by C. P. Street, national president of the association, and it was accepted by John P. Kerr, Cassidy Construction Co., Paducah, president of the new group.

J. Edwin Ruby, Ruby Construction Co., Madisonville, is vice president, and Robert O. Clower, Paducah, where the new chapter will have its headquarters, is executive secretary. The

A.G.C. of Western Kentucky Chartered as Building Group

- Charter is Presented by President C. P. Street
- 122nd Chapter Has Jurisdiction in 17 Counties

chapter has jurisdiction for building construction in 17 counties in western Kentucky. Nineteen construction firms have affiliated with the new chapter to become charter members.

There are two other A.G.C. chap-

ters in the state, the Kentucky Highway Division, with headquarters in Frankfort, and the Louisville Chapter, a building group. In addition to Mr. Kerr and Mr. Ruby, directors of the new chapter are: Robert F. Traylor, Paducah; Hal Perry, Benton; Hal T. Wright, Mayfield; J. T. Divine, Central City, and James R. Shephard, Hopkinsville.

A panel consisting of Mr. Street; Albert J. Sweet, secretary-manager of the Evansville Chapter; John Cassidy, John Cassidy Construction Co., Memphis, Tenn., president, and W. W. MacLaughlin, Jr., secretary-manager respectively, of the Memphis Chapter answered questions from the floor about A.G.C.

Charter member-firms of the new chapter are: J. R. Barley, Venable & King, and Ralph R. Wright & Son, all of Mayfield; Divine Bros. Construction Co., Central City; Hal Perry, Benton; Kirkpatrick Construction Corp., and W. B. McIntosh, both of Hopkinsville; John Cassidy Construction Co., Memphis, Tenn.; Traylor Bros., Inc., Evansville, Ind.; Ruby Construction Co., Madisonville; Edgar Stephens & Son, Cairo, Ill., and Ray Black & Son, Leslie A. Feast, Ed. D. Hannan, Harper & Gray, George W. Katterjohn, Lake Shore Paving Company, Inc., Brady Thomasson & Son, and Grover C. Watkins Co., all of Paducah.



Above, left to right, Directors Robert F. Traylor, Hal Perry, Hal T. Wright, Mr. Kerr, James R. Shephard. Not shown are J. Edwin Ruby and J. T. Divine.



John P. Kerr, left, president of the Associated General Contractors of Western Kentucky, accepts the chapter's charter from President Street.

The Georgia Branch of the A.G.C. installed new officers at a meeting in Atlanta July 2.

H. D. Humphries, of Concrete Builders, Inc., Atlanta, is the new president, succeeding W. M. Wheeler, who is now an A.G.C. director for the state. Other officers include J. J. Black, J. J. Black Co., Atlanta, first vice president; Robert R. Johnson, Johnson & Johnson Construction Co., Rome, second vice president; W. P. Rose, Rose Construction Co., Atlanta, secretary; and Alvin Barge, Strother-Barge Co., Atlanta, treasurer.

Hugh W. Roberts, executive secretary since 1928, retired July 1. He was succeeded by R. H. Strickland.

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TS-300 IN ACTION

14 cu. yd. truck capacity
18 cu. yd. heaped capacity
280 hp. Buda diesel or
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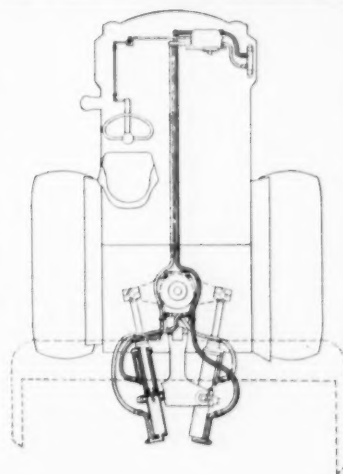
The full control built into Allis-Chalmers *Motor Scrapers* offers you a real advantage. There's no tiring wheel fight for the operator . . . no straining to see what he's doing. What's more, full control creates greater confidence when he's high-balling a full load. He can work at his best all day long easily and safely. To you owners, that means moving *more dirt faster, more profitably.*

Your nearby Allis-Chalmers dealer will be glad to show you these job-proved *Motor Scrapers* and give you the full story. See them at work.

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EASY, FAST-ACTION STEERING

Schematic layout shows simple double-action steering system. Slightest movement of wheel opens valve of gear-type pump; release wheel and valve automatically returns to "hold." Only a one-third turn of steering wheel is necessary for a full swing of the tractor.



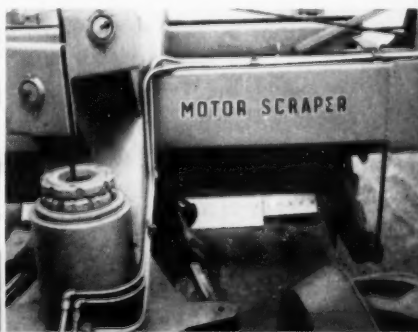
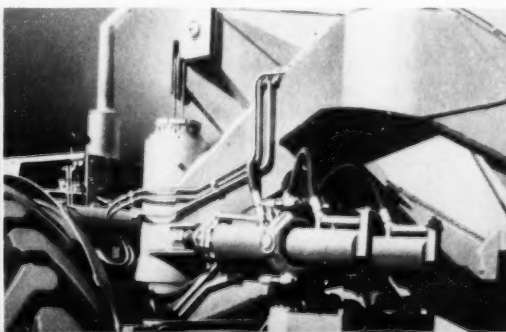
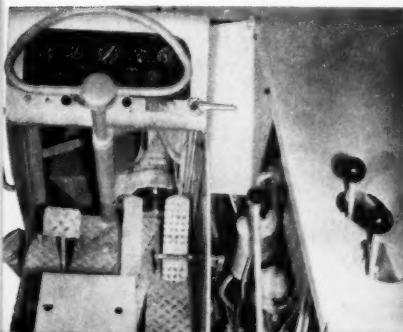
One Hand Does the Steering

—the other handles scraper controls. Fast action makes loading easy. Operator can use power of steering jacks to pull through soft spots under extreme conditions.

No Weaving — No Road Shock — Hydraulic system is locked and the *Motor Scraper* becomes a rigid 4-wheel unit except when steering wheel is turned, thus eliminating transmission of road shock to steering wheel. Low-mounted rams, close to load line pull, mean minimum stress on the kingpin.

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—Clean design of low gooseneck connection gives operator unequalled view of cutting edge, helps him cut cleanly, efficiently . . . load fast and full on your jobs.



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CONTRACT BONDS



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INSURANCE COMPANIES OF PHILADELPHIA

PREFERRED RATES Use of our preferred rates may mean the difference between your bid and competing ones on your next job.

FASTEST SERVICE Our lines of credit for contractors enable our agents to execute Bid and Performance Bonds very promptly.

FINANCIAL STRENGTH The financial strength of Fire Association and Reliance, and their excellent reinsurance connections, make it possible to authorize contract bonds on big jobs without delay.

Find out how these combined advantages can save enough to give you the deciding "edge" over competing bids. Ask your agent or broker to establish your line of credit with us now, or write for name of our nearest agent.

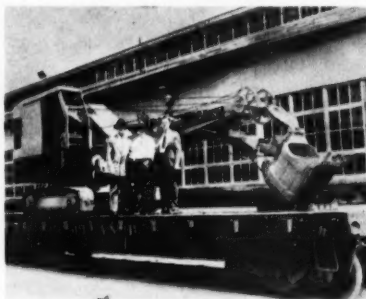
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**PROPERTY AND CASUALTY INSURANCE
SURETY BONDS**

*Reliable Insurance Protection
for 136 Years*

NEW EQUIPMENT • MATERIALS

Excavator—*Koehring Co., Milwaukee 16.* Newly designed crawler-mounted excavator is being produced by Koehring Southern Co., new Koehring subsidiary, at Chattanooga. Excavator, Model 205, is rated at $\frac{1}{2}$ -cu. yd. dipper capacity for shovel and hoe. It features simplified upper machinery arrangement that involves 2 horizontal shafts. Lift capacity rating has been increased from $7\frac{3}{4}$ - to 10-ton. Other improvements in new model include fully enclosed gears, automatic brakes, new cab design and operating lever arrangement, adjustable hook rollers and electric dipper trip arrangement. Self-energizing brakes are automatically engaged at all times and require no adjustment for life of brake lining.



Koehring Model 205

Power Units—*International Harvester Co., 180 N. Michigan Ave., Chicago 1.* Seven new 6-cylinder models have been added to International gasoline power unit line. New valve-in-head power units and their h.p. ratings are: U-1091 (natural gas), 180 net h.p. @ 1,375 r.p.m. or up to 200 net h.p. @ 1,600 r.p.m. on factory-approved applications; U-450, 102 net h.p. @ 1,800 r.p.m.; U-406, 91 net h.p. @ 1,800 r.p.m.; U-372, 83 net h.p. @ 1,800 r.p.m.; U-269, 62 net h.p. @ 1,800 r.p.m.; U-240, 55 net h.p. @ 1,800 r.p.m.; U-220, 50.5 net h.p. @ 1,800 r.p.m. Model U-1091 and UD-24 diesel power unit have many common components. Principal differences are different cylinder head and elimination of fuel injection system. Six other new models have International truck engines.

Protective Coating for Wheel Rims—*Goodyear Tire & Rubber Co., Akron 16, Ohio.* "Bond-A-Coat," for protecting rims against weather, corrosion, marring, discoloration, etc., gives hard aluminum finish. To ap-

ply, rim is "bonderized" and give coating of heat-drying enamel, baked on.

Tandem Front Axle—*Chain Belt Co., 4625 W. Greenfield Ave., Milwaukee 1.* "Rex-Spangler" dual-steering tandem front axle is second front axle that can be added to any standard truck. It is coupled to standard front axle by walking beam, resulting in tandem bogie that steers all front wheels with center poise steering.

Steel Building Panel—*Detroit Steel Products Co., 2250 E. Grand Blvd., Detroit 11.* "Fenestra" double hat "D" panel for use in floors, ceilings or roofs was developed to supply need for panel which could span greater distances between structural beams than single-hat panel. It can be manufactured in lengths up to 33'. Panel is designed in accordance with specifications of American Iron and Steel Institute. Panels interlock to form subfloor or combination ceiling and roof. They are spot-welded to supporting structural beams or bearing walls. Panel is produced in gages 18 through 13 and is 24" wide, with depths from $1\frac{1}{2}$ " to $7\frac{1}{2}$ ". Panel will provide cells at 12" on center for use as ducts in recently announced electric-floor.

Concrete Curing Compound—*Aluminum Industries, Inc., Cincinnati.* "Permite PW-40" is resin-wax base, white pigmented compound. Advantages cited are that white pigment obscures surface of concrete, reflecting heat-producing infra-red rays of sun, preventing premature cracking, and that white pigment can be readily observed as it is applied and area of application easily identified. It is packaged in 55-gal. agitator-type drums.

Equipment Re-builder—*Mir-O-Col Alloy Co., 312 N. Ave. 21, Los Angeles 31.* Model K-2 automatic re-builder, designed to handle work up to 40" in diameter, welds 30" of bead per minute. It takes all types and sizes of automatic wire up to $\frac{1}{4}$ " in size. Adjusting wheel permits vertical adjustments of $\frac{1}{64}$ ". Lock on centers prevents slippage and insures concentric build-up. Gear reducer on motor permits variable spindle speeds from $\frac{1}{4}$ r.p.m. to 3 r.p.m. Using submerged arc principle of automatic welding, it has automatic welding positioner and simplified control panel.

Trench Hoe Boom—*Gar Wood Industries, Wayne, Mich.* Optional heavy-duty boom for 75 series excavators is designed for extra-rugged excavation and cross-country pipeline work. It weighs 8,500 lbs. It is easily removed for conversion to shovel, crane, dragline, clamshell, pile driver.



Gar Wood trench hoe boom

Hose—*Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston 3.* High-pressure air hose for mining, tunneling and construction work combines strength and flexibility, according to manufacturer. Steel wire used in horizontal braided construction enables hose to carry working pressures as high as 2,000 lbs. per sq. in. Called "Concord Yellow Jack," it has yellow cover for visibility in underground work. It is manufactured in 8 sizes from 3/8" to 2 1/2" inside diameter.

Saw Table—*Porter-Cable Machine Co., 20 Exchange St., Syracuse, N. Y.* Light-weight, rigid steel table with angle gage and fence converts portable electric saw into table saw. It weighs 42 lbs. It will accommodate any of 7 Porter-Cable electric hand saws. Inverted saw is mounted to underside of table with blade protruding through slot. Depth and angle of cut are adjusted by controls built into saw. Two knurled knobs hold rip fence square at any position along steel guide track. Calibrated angle gage rides in slot parallel to fence. Table is 18" x 21" and is plated with zinc.

Drill—*Mobile Drilling, Inc., 960 N. Pennsylvania St., Indianapolis.* Model B-52 rotary drill features 500' drilling depth, one-man operation, skid or trailer mounting with independent power plant or P.T.O. operation. It is designed to fit Ford, International, Willys, Chevrolet or Dodge heavy-duty trucks. It combines in one unit

Okay~

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What's more — crisp, clean, easy-to-hold AJAX cups reduce the risk of transmitted infections, help cut absenteeism, improve morale, encourage good housekeeping. For the full story, use the coupon below.



AJAX® CUPS and Mobile Drinking Water Tank deliver fresh cool water to workers in the field — mean less time lost on the job. Cups in 4 oz., 6 oz., and 7 oz. sizes, packed imprinted with assorted, standard safety messages, or your own messages to order.



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Company _____

Address _____

CS-3c

3 types of drilling—auger, rotary core and percussion.

Protractor—Way-Mac Mfg. Co., 8112 Melrose Ave., Los Angeles 46. "Tractograf" protractor permits drawing angles from zero to 180° without turning, sliding or moving protractor out of position. Upper rule arm is swung to desired angle and adjustment knob locked. Magnifier,

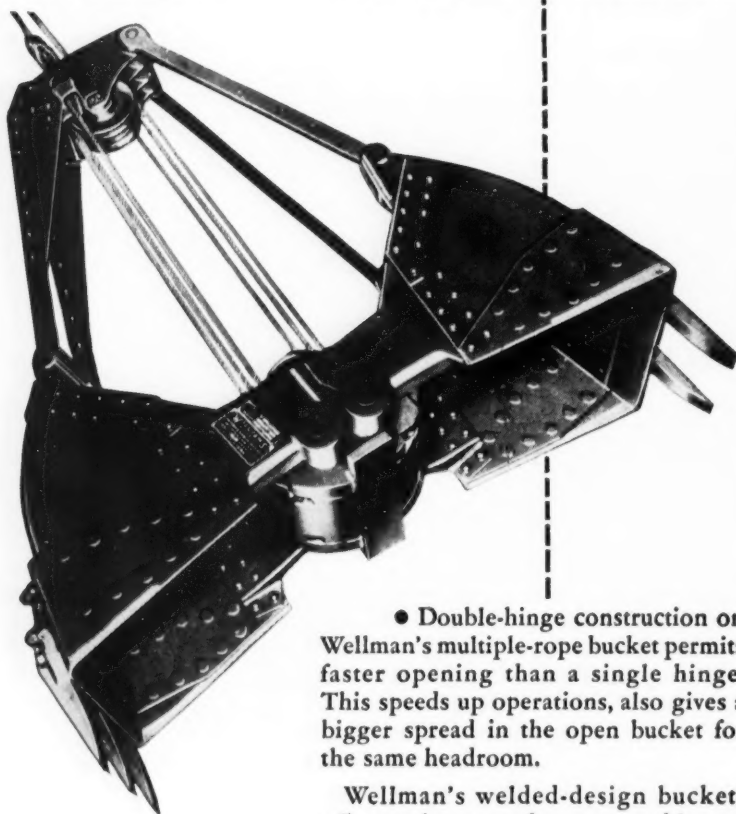
built in over registration mark, gives hairline adjustment. Arc is calibrated in 1° and 5° divisions. Mathematical formulae are printed on reverse side of dial, and there is 5" rule on lower arm.

Metal Wall Panel—Steelcraft Manufacturing Co., Rossmoyne, Ohio. Insulated panels for curtain wall construction are available in galvanized

or painted steel, aluminum or stainless, flush or fluted. They are factory-assembled, including core of fiber-glass insulation. They may be applied horizontally or vertically. Catalog giving descriptive information, illustrations, specifications and detailed drawings is available from manufacturer.

Truck Mixer—Construction Machinery Co., Waterloo, Iowa. New 4½-yd. "Transcrete" truck mixer features C.M.C. right-angle drive, "Thoro-Mix" action, "Free-Flo" discharge and simple, rugged design.

WELLMAN *Williams Type* FAST BUCKET OPENING SPEEDS OPERATIONS



• Double-hinge construction on Wellman's multiple-rope bucket permits faster opening than a single hinge. This speeds up operations, also gives a bigger spread in the open bucket for the same headroom.

Wellman's welded-design buckets offer you better performance and longer service. In all types and sizes you'll do better with Wellman!

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THE WELLMAN ENGINEERING COMPANY
7000 Central Avenue
Cleveland 4, Ohio



Construction Machinery Co.'s 4½-yd. truck mixer

Trencher—Wagner Iron Works, Milwaukee. Model WT swing trencher is hydraulic front-mounted unit. Boom has lateral swing of more than 30° to right or left of trench and dump height sufficient to load trucks. It is powered by Wagner hydraulic system and is designed to handle wide range of bucket sizes and types. It can be converted to heavy-duty loader by addition of standard loader dipper stick assembly.

Saw—Mall Tool Co., 7725 S. Chicago Ave., Chicago 19. Portable electric saw is designed to cut heavy building timbers and outsize lumber. Blade is 10" and has following cutting capacities: straight cuts, 3.62" maximum, 2.38" minimum; bevel cuts from zero to 45° with 2.88 maximum depth of cut at 45°. Blade speed is 3,500 r.p.m. free. Saw weighs 20 lbs., is 18" long, 6.5" wide, 12.25" high. It runs on standard 115 volts (230-volt model available). Generator size required is 1,500 watts.

Conveyor—Fairfield Engineering Co., Barnhart St., Marion, Ohio. Conveyor of building materials is offered in 2 models. Flare Top (Model 270) has deeper trough and conveys all materials up to 16" wide. For elevating wide board, roofing or siding, Flat Top (Model 271) is available. By adding one or two 8' boom sections,

24' base machine can be converted into 32' or 40' conveyor. It can be moved by one man and can be towed by truck or car.

Cellular Concrete—*Calsi-crete Corp., Saginaw, Mich.* "Calsi-crete" is European development. It can be nailed, sawed and cut like wood. It has insulating, load bearing, acoustical and water-resisting qualities for walls, roofs, partitions and firedoor cores. Three types will be manufactured, varying in strength and other characteristics, depending on particular application. Material is lightened by mixing preformed foam into slurry comprised of siliceous material with chosen cementitious material and water. Aerated fluid mix is cast to exact size or can be cut into required sizes before being cured in high-pressure steam autoclaves. It is ready to use within 24 hours after mixing.



"Calsi-crete" can be sawed or cut

Vibrating Screen—*Diamond Iron Works, Inc., 1748 N. 2d St., Minneapolis 11.* New 5' wide series of vibrating screens are available in 10', 12' and 14' lengths. They offer choice of 1, 2, 2½ or 3 decks. Side plates are reinforced at shaft to eliminate vibration. Heavy steel plates between bearings increase side plate strength. They are equipped with Timken double row roller bearings, rubber-mounted main bearing cages, adjustable spring balance cups and screen clamp bars over center supports. Side plates are 5/16" and there is 5/16" throw on shaft.

Installing an Armco bridge is easy as 1, 2, 3

Simple installation of Armco MULTI-PLATE Structures makes it easy to bid low on small bridge jobs—and still retain a good profit.

Bridges of Armco MULTI-PLATE Pipe or Pipe-Arch are completed in just three steps. First, prepare the site. Next, assemble the structure. Finally, backfill and finish. There is no delay for curing, no special tools. Workmen simply bolt the pre-curved corrugated metal plates together. The job goes fast in almost any kind of weather.

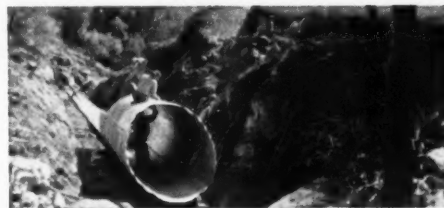
Next time, figure on Armco Pipe, Arch or Pipe-Arch for large culverts, small bridges, underpasses, conduits, or relining existing structures. Wide range of sizes. Write for details. Armco Drainage & Metal Products, Inc., 4263 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation.

1



Prepare site

2



Assemble MULTI-PLATE

3



Backfill and finish

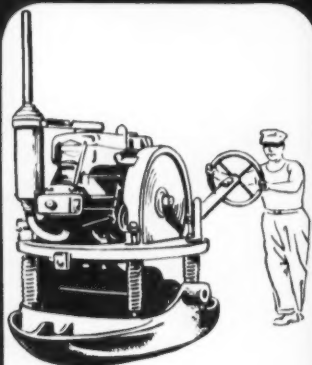
Armco Drainage Structures



denser soil compaction
in **"2 PASSES"**
than heavy equipment
gets in 6 and 8

VIBRO-PLUS TERRAPAC VIBRATORY soil compactor

It weighs only 1.6 tons—yet outperforms 12-ton rollers, 7-ton vibratory rollers, 25-ton rubber-tired rollers on any type of granular soil. "Walked" by one man, it compacts 2000 sq. ft. per hour—8000 sq. ft. when towed by tractor—penetrating up to 40 inches—and getting in almost anywhere. On roads, railway embankments, back fills, dams, airfields, heavy duty floors and foundations—it helps you show a profit when other equipment can't. Write for bulletins, names of users, and nearest distributor.



TYPE MRJ-6 Terrapac is powered by a 10 HP Diesel engine. One-man operation. 65" x 45-5/16" base steers easily for maximum maneuverability, forward or backward. Rubber-tired wheels attach for transportation.

**VIBRO-PLUS
PRODUCTS, INC.**

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WORLD PIONEERS IN APPLIED VIBRATION

NEW LITERATURE

Tractors—Allis-Chalmers Tractor Division, Milwaukee 1. Four diesel-powered crawler tractors, HD-5, HD-9, HD-15, HD-20, are presented in catalog which shows details of construction of each model with cut-away pictures and variety of applications on job.

Scrapers—Allis-Chalmers booklet presents its line of 7 pull-type scrapers. Detail views of each unit are shown. Complete specifications and other pertinent data are included.

Loader—Tractomotive Corp., Deerfield, Ill. TL-10 "Tracto-Loader" is presented in new bulletin. Featured are hydraulic torque converter drive and specially designed clutch-type transmission. Interchangeable attachments, including light materials bucket, lift fork, crane hook and bulldozer blade are pictured and described. Specifications are given.

Shovel—Marion Power Shovel Co., Marion, Ohio. Marion 111-M Ward-Leonard electric shovel is described in Bulletin 408. Illustrations show machine in many material-handling applications. Design features are described, Ward-Leonard controls explained.

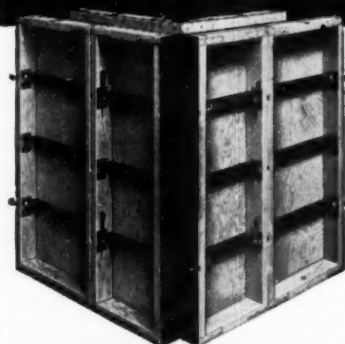
Engines—Wisconsin Motor Corp., Milwaukee 46. Complete line of Wisconsin air-cooled engines are presented in booklet, Form S-150. Models are pictured and described and their features explained. Specifications are given. Many action photos show various applications. Distributors are listed.

Tractor—Caterpillar Tractor Co., Peoria 8, Ill. DW20 wheel-type tractor is presented in booklet, Form 30728. Illustrated with on-job photos, booklet shows strong frame, power plant, hydraulic steering mechanism, accurate control of dumping.

Partitions—Metal Lath Manufacturers Assn., Engineers Bldg., Cleveland 14. Complete technical data, construction techniques, details and guide specifications for metal lath and plaster solid stud partitions are presented in Technical Bulletin No. 5.

Engines—Murphy Diesel Co., 5333 W. Burnham St., Milwaukee 14. Booklet gives detailed descriptions of engineering design features of diesel

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engines. Ratings are given. Photos show typical installations.

Road Machinery—Wm. Bros Boiler & Mfg. Co., Minneapolis 14. Folder illustrates and describes pneumatic tire rollers, 50-ton "Roll-O-Pactors," drum-type tampers, "Bituminizer" distributors, "Spraymatic" spray bars, portable steam generators and asphalt circulators.

Sanitary Fill Construction—Drott Manufacturing Corp., Milwaukee 8. *How to Construct a Sanitary Fill* is title of booklet describing Drott ramp method of transforming rubbish dump into clean land. Information is given on initial planning, compacting, loading, spreading and finishing landfill.

Powder-Actuated Tools—Ramset Division, Olin Industries, Inc., 12117 Berea Rd., Cleveland 11. Applications manual for use with powder-actuated fastening system includes photos and cut-away sketches showing how tools are employed in various installations in building and maintenance fields as well as in other crafts. Selection tables set forth proper type of fastener and proper powder charge for various materials. Manual lists speci-

NEW LITERATURE

fications of more than 20 fixtures and accessories and 56 drive pins and threaded studs which make up Ramset system.

Wire Rope—Macchylte Co., Kenosha, Wis. Wire rope recommendations for contractors' equipment are given in 4" x 6" 20-page booklet. It explains wire rope constructions and discusses lang lay vs. regular lay rope, clamshell buckets and internal lubrication. Outline drawings of equipment are accompanied by recommendations for each rope on each machine.

Scaffolding—Advance Scaffold Division, Beaver Art Metal Corp., Ellwood City, Pa. Tubular steel scaffolds are presented in Folder 53. Various panel styles are illustrated and proper application described. Patented locks which take place of bolts, nuts and clamps are presented.

Paving Joint Sealers—Presstite Engineering Co., 3786 Chouteau Ave., St. Louis 10. Catalog contains laboratory data, specifications and methods of application of line of cold applied paving joint sealers for concrete and bituminous highways, bridge decks, canal linings, airport aprons and runways, etc. It includes photos and descriptions of equipment for applying sealants.

Rollers—Buffalo-Springfield Roller Co., Springfield, Ohio. Features of 5- to 16-ton C Model tandem rollers are presented in Form S 61-53. Design of rollers to give more visibility and more ground clearance is explained, power plant described, optional equipment listed and specifications given.

Rock Bits—Brunner & Lay, Inc., 9300 King St., Franklin Park, Ill. Catalog presents tungsten-carbide "Rok-Bits," carbide-insert intra-set drill steel, hollow drill steel, paving breaking, clay digging and asphalt cutting tools, pneumatic star drills, chipping hammer tools.

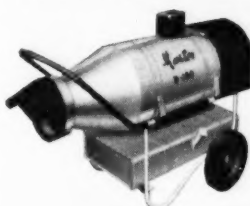
Hardwood Flooring—Maple Flooring Manufacturers Assn., 35 E. Wacker Drive, Chicago 1. Folder tells how problems arising from expansion of kiln-dried hardwood flooring, caused by moisture absorption, can be eliminated. It gives suggestions for installation and care of flooring.

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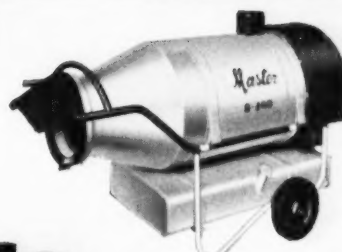
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No. 1 BUY**



Master Model B-160
Super-Space Heater
high output for
smaller heating jobs



Master Model B-240
Super-Space Heater
for larger heating
assignments



Master Model B-400
Super-Space Heater
to meet extra big
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to meet every need

NEW MASTER SUPER-SPACE HEATER SPECIFICATIONS

MODEL NO.	CAPACITY	*SAFETY	BURNER	FUEL	
B-160	160,000 BTU per hour	Indications of carbon monoxide in the exhaust gases of the kerosene fueled Master Space Heater was less than 0.001 per cent by volume . . . as tested by an independent testing laboratory. According to accepted standards this content is one tenth of the amount considered hazardous.	Master Gun Type	Kerosene, No. 1 Fuel Oil or No. 2 Fuel Oil	
B-240	240,000 BTU per hour				
B-400	400,000 BTU per hour				
(Continued)	FUEL CONSUMPTION	HOT AIR OUTPUT	CONTROLS	SIZE	WEIGHT
B-160	1.14 per hr.	1100 C.F.M.	Thermostat for full automatic temperature control, Fuel tank safety control.	W-24 1/2" L-58" H-34"	166 lbs. less fuel
B-240	1.71 per hr.	1900 C.F.M.	Thermostat for full automatic temperature control, Fuel tank and burner safety control.	W-29" L-60" H-39"	250 lbs. less fuel
B-400	2.85 per hr.	3500 C.F.M.		W-33" L-72" H-45"	311 lbs. less fuel

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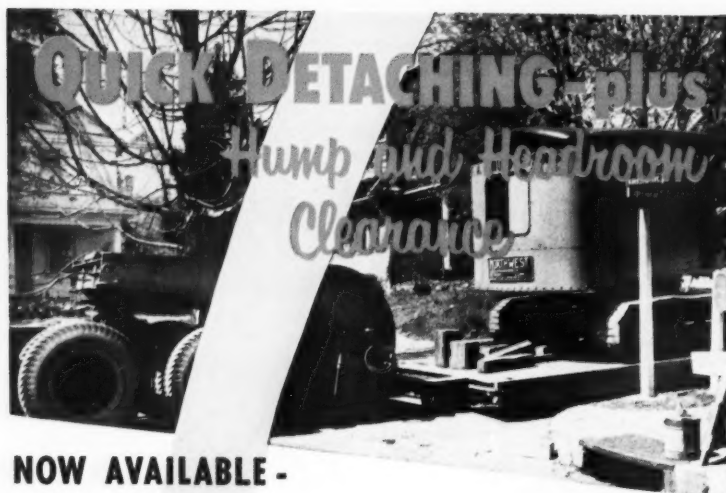
Master Portable
Generator Plants
1/2 KW to 100 KW

Master Vibratory
Concrete Finishing
Screed

Master Power-
Blow Electric
Hammer and
Spade

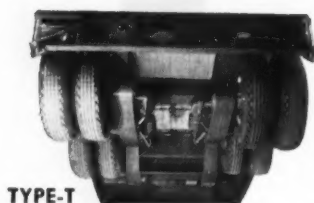
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Master Gas
or Electric
Concrete
Vibrators



NOW AVAILABLE -
with a rear unit to
meet your preference
or legal requirements

Great versatility and exceptional speed of disconnecting, loading and reconnecting have conclusively proved the superiority of



TYPE-T

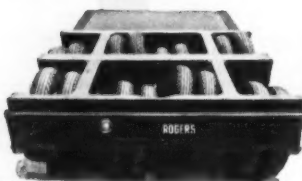
ROGERS POWER LIFT DETACHABLE GOOSENECK TRAILERS



TYPE-H

These trailers also embody the exclusive ability to drop the deck to clear low over-head obstructions or raise the deck to pass over humps in the roadway.

Of interest, too, is the fact that you can obtain this remarkable gooseneck in conjunction with any of the popular Rogers rear units illustrated here.



TYPE-D

This enables purchasers to meet special load requirements, to comply with their state road laws or simply satisfy their own preference, many of which have been established through years of satisfactory service with certain types of Rogers Trailers.

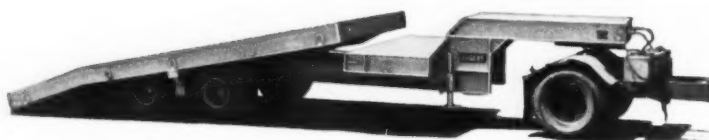
Write for all the facts.

Developed by The Trailer Pioneers

ROGERS BROS. CORP. ALBION, PENNA.

223 ORCHARD STREET

Export Office: 50 Church St.,
New York 7, N. Y., U. S. A.



Divided bed, tilt deck trailer with gooseneck.

NEW LITERATURE

with special emphasis on allowance for expansion, damp-season ventilation and preliminary handling before laying, and lists precautions to take in handling flooring at job site.

Parts Service—*The Euclid Road Machinery Co., Cleveland 17.* Booklet explains various functions and operations of Parts Department, which has been established as independent operation for furnishing parts service. How modern office space and equipment reduce time required to process parts orders is explained.

Truck Crane—*Schield Bantam Co., Waverly, Iowa.* Model T-35 6-ton $\frac{3}{8}$ -yd. truck crane is described in Bulletin TCR-201. It contains detailed mechanical specifications, together with complete dimensions and operating data, including information on various truck mountings and interchangeable attachments used with crane boom. Charts show lifting capacities at various radii for 2½- and 4-ton truck-mountings, using 25' to 45' booms. Over-end and over-side ratings, with and without outriggers, are included.

Jacks—*Templeton, Kenly and Co., Gardner Road, Broadview, Ill.* "Simplex" hydraulic jacks, rams and pullers are presented in revised Bulletin 53. Application pictures and information and illustrations on accessories and attachments for hydraulic equipment with capacities of 10 to 100 tons are included.

New Construction Movies

Marion Power Shovel Co. announces a 16-mm color-sound film on its new 191-M shovel. It is 12½ minutes in length and was filmed during construction of two large dams in the Midwest. Both the all-electric and diesel-electric models are shown loading truck haulage units in the 50-ton class. The film may be secured from the company at Marion, Ohio.

Barber-Greene Co. offers a 16-mm sound color 26-minute film on its 840 series asphalt plants. It describes equipment making up plant and shows combinations to produce any type of hot or cold bituminous mix. Erection of plant and operation are shown. Film may be secured from Barber-Greene at Aurora, Ill.

Robert V. Cummins has been appointed head of the sales promotion department of MARMON-HERRINGTON Co.

R. H. Rodolf, formerly manager, rock drill sales, for LE ROI Co.'s Cleveland Rock Drill Division, has been named general sales manager of the Construction and Mining Division. A. J. Jensen has been named assistant to Mr. Rodolf. C. L. Meigs, formerly assistant manager of the Construction and Mining Division, has been named manager, portable compressor sales. N. M. Sedgwick formerly general sales manager of the Construction and Mining Division, has been named general manager of Le Roi-Transo Division, a newly formed division that will manufacture and merchandise front-end loaders and truck-mounted concrete mixers. William D. Lund, formerly assistant to the general sales manager of the Construction and Mining Division, is now assistant general manager of the new division.

WORTHINGTON CORP. plans an expansion and modernization program at its Plainfield works. Within next nine months it expects to spend well over one million dollars to increase by one-third its production of construction equipment, positioning machines and industrial mixers.

Purchase of the O.K. CLUTCH & MACHINERY Co. by the John C. Motter Printing Press Co. has been completed and sales and manufacture of the O.K. line of compressors, hoists and portable elevators will be carried on through the O.K. Machinery Division of the new company. James L. Ealy will be general manager of the division and will be assisted by Charles H. Druschel, who has been with O.K. since 1927.

Charles B. Baker, vice president and general attorney of UNIVERSAL ATLAS CEMENT Co., has been elected executive vice president, succeeding George H. Reiter, who has retired. Donald C. Leo, secretary, has been named general attorney.

Reorganization of the domestic sales territories of LETOURNEAU-WESTINGHOUSE Co. into eastern and western divisions instead of eastern, central and western has been announced. J. A. Vincent continues as eastern division sales manager and F. W. Duke,

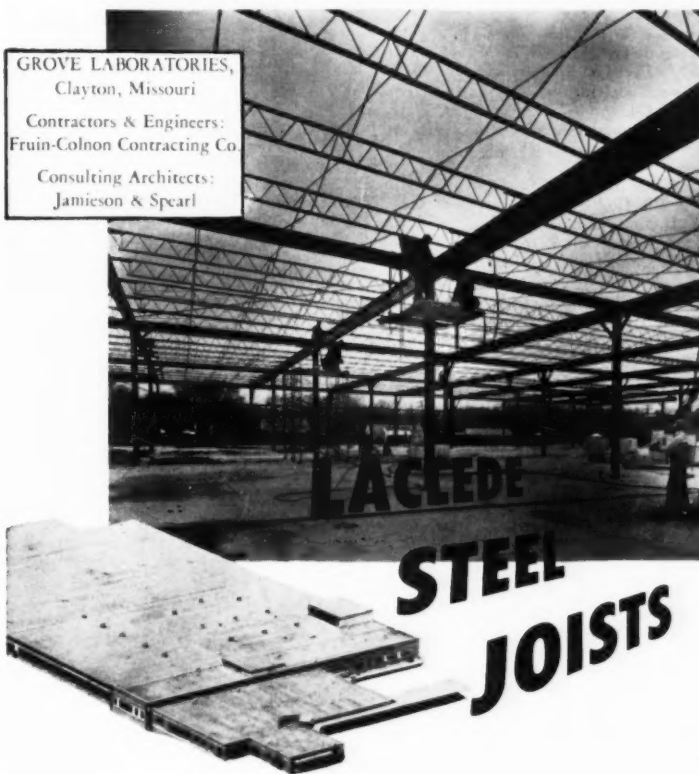
former district sales representative, has been appointed western manager.

In an effort to do its part in promoting safety on the nation's highways. THE TIMKEN ROLLER BEARING Co. has curtailed all inbound and outbound truck traffic between its plants, to customers and from suppliers between midnight Friday and midnight Sunday.

Harald T. Reishus, who has been general manager of the Industrial Power Division of INTERNATIONAL HARVESTER Co. since its formation in 1944, has been elected vice president in charge of the division.

Harold B. Ressler, chairman of the executive committee of JOSEPH T. RYERSON & SON, INC., retired June 30 after 48 years' service.

GROVE LABORATORIES,
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LACLEDE STEEL COMPANY

St. Louis, Mo.

ADVERTISERS' PRODUCTS

Manufacturers' addresses are listed on page 70

Aggregate (Light-Weight)

Great Lakes Carbon Corp.

Air Entraining Agents

A. C. Horn Co.

Airplanes

Aero Design and Engineering Co.

Asphalt Plants (Portable)

Barber-Greene Co.
Iowa Mfg. Co.
White Mfg. Co.

Backfillers

Bucyrus-Erie Co.
Cleveland Trencher Co.
Gradall Division
Harnischfeger Corp.
Parsons Co.
Unit Crane and Shovel Corp.

Batches

Blaw-Knox Division
Butler Bin Co.
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
C. S. Johnson Co.

Bearings (Anti-Friction, Tapered Roller)

Hyatt Bearings Division
Timken Roller Bearing Co.

Bins

Blaw-Knox Division
L. Burmeister Co.
Butler Bin Co.
Heltzel Steel Form & Iron Co.
Iowa Mfg. Co.
C. S. Johnson Co.

Bits (Detachable Drill)

Ingersoll-Rand Co.
Timken Roller Bearing Co.

Blasting Accessories

American Cyanamid Co.

Bridges

American Bridge Division
Armco Drainage & Metal Products

Buckets (Clamshell & Dragline)

Blaw-Knox Division
Bucyrus-Erie Co.
Harnischfeger Corp.
C. S. Johnson Co.
Owen Bucket Co.
Wellman Engineering Co.

Buckets (Concrete)

Blaw-Knox Division
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
Owen Bucket Co.

Buildings (Steel)

Allied Structural Steel Cos.
American Bridge Division
Armco Drainage & Metal Products
Macomber, Inc.
Truscon Steel Division

Bulldozers

Bucyrus-Erie Co.
LeTourneau-Westinghouse Co.

Car Pullers

Clyde Iron Works
Superior-Lidgerwood-Mundy Corp.

Cement (Common and Special)

Lehigh Portland Cement Co.
Lone Star Cement Corp.
Marquette Cement Mfg. Co.
Medusa Portland Cement Co.
Universal Atlas Cement Co.

Cement (White)

Medusa Portland Cement Co.
Trinity White, General Portland Cement Co.
Universal Atlas Cement Co.

Clamps (Hose)

Dixon Valve & Coupling Co.

Compressors

Allis-Chalmers Co.
Ingersoll-Rand Co.
LeRoi Co.
O. K. Machinery Division

Concrete Curing Material

A. C. Horn Co.

Concrete Mixers, Pavers, Tampers

Chain Belt Co.
Construction Machinery Co.
Foote Construction Equipment Division
Jaeger Machine Co.
Knickerbocker Co.
Koehring Co.
Kwik-Mix Co.
T. L. Smith Co.
Worthington Corp., Construction Equipment Division

Concrete Vibrators

Concrete Surfacing Machinery Co.
Electric Tamper & Equipment Co.
Ingersoll-Rand Co.
Master Vibrator Co.
Vibro-Plus Products, Inc.
White Mfg. Co.

Conveying Machinery

Barber-Greene Co.
Chain Belt Co.
Iowa Mfg. Co.
Smith Engineering Works

Proven Dependability



for over 100 years

Manufacturers of Pile Driving Hammers and Pile Extractors
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all the joints**

between strips of the smooth
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Barber-Greene
AURORA, ILLINOIS, U. S. A.

Cranes

Austin-Western Co.
Bucyrus-Erie Co.
Cleveland Trencher Co.
Clyde Iron Works
Harnischfeger Corp.
Koehring Co.
Michigan Power Shovel Co.
Northwest Engineering Co.
Thew Shovel Co.
Unit Crane and Shovel Corp.

Crushing Machinery

Allis-Chalmers Co.
Austin-Western Co.
Iowa Mfg. Co.
Smith Engineering Works

Culverts

Albert Pipe Supply Co.
Armed Drainage & Metal Products

Cups (Paper Drinking)

United States Envelope Co.

Cutters (Abrasive)

Wodack Electric Tool Corp.

Decking (Roof Steel & Aluminum)

Macomber, Inc.

Derricks

Clyde Iron Works

Doors (Metal, Wood)

Ceco Steel Products Corp.
Kinnear Mfg. Co.
R. C. Mahon Co.
Truscon Steel Division

Dredging Machinery

Bucyrus-Erie Co.
Harnischfeger Corp.
Northwest Engineering Co.

Drills & Drilling Machinery

Bucyrus-Erie Co.
Buda Co.
Ingersoll-Rand Co.
Timken Roller Bearing Co.

Drills (Electric)

Wodack Electric Tool Corp.

Drinking Water Dispensers

United States Envelope Co.

Elevators (Material)

Chain Belt Co.
Iowa Mfg. Co.
O.K. Machinery Division
Smith Engineering Works

Engines

Allis-Chalmers Tractor Div.
American Hoist & Derrick Co.
Buda Co.
Caterpillar Tractor Co.
Continental Motors Corp.
Cummins Engine Co.

Detroit Diesel Engine Division

Harnischfeger Corp.
Ingersoll-Rand Co.
International Harvester Co.
LeRoi Co.
Wisconsin Motor Corp.

Expansion Joints

Laclede Steel Co.

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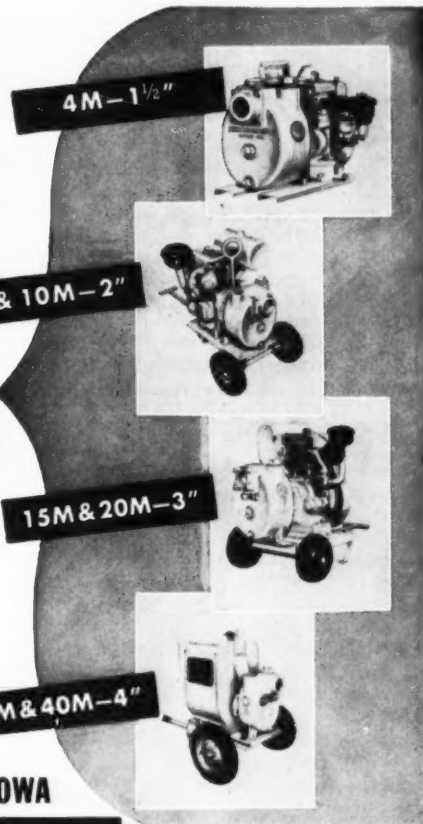


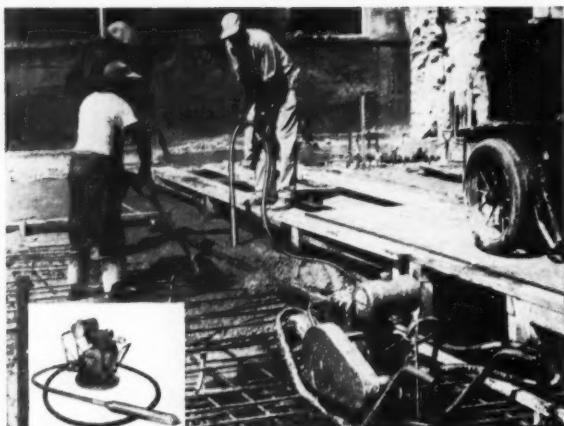
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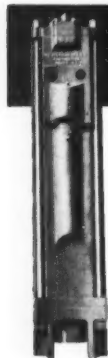
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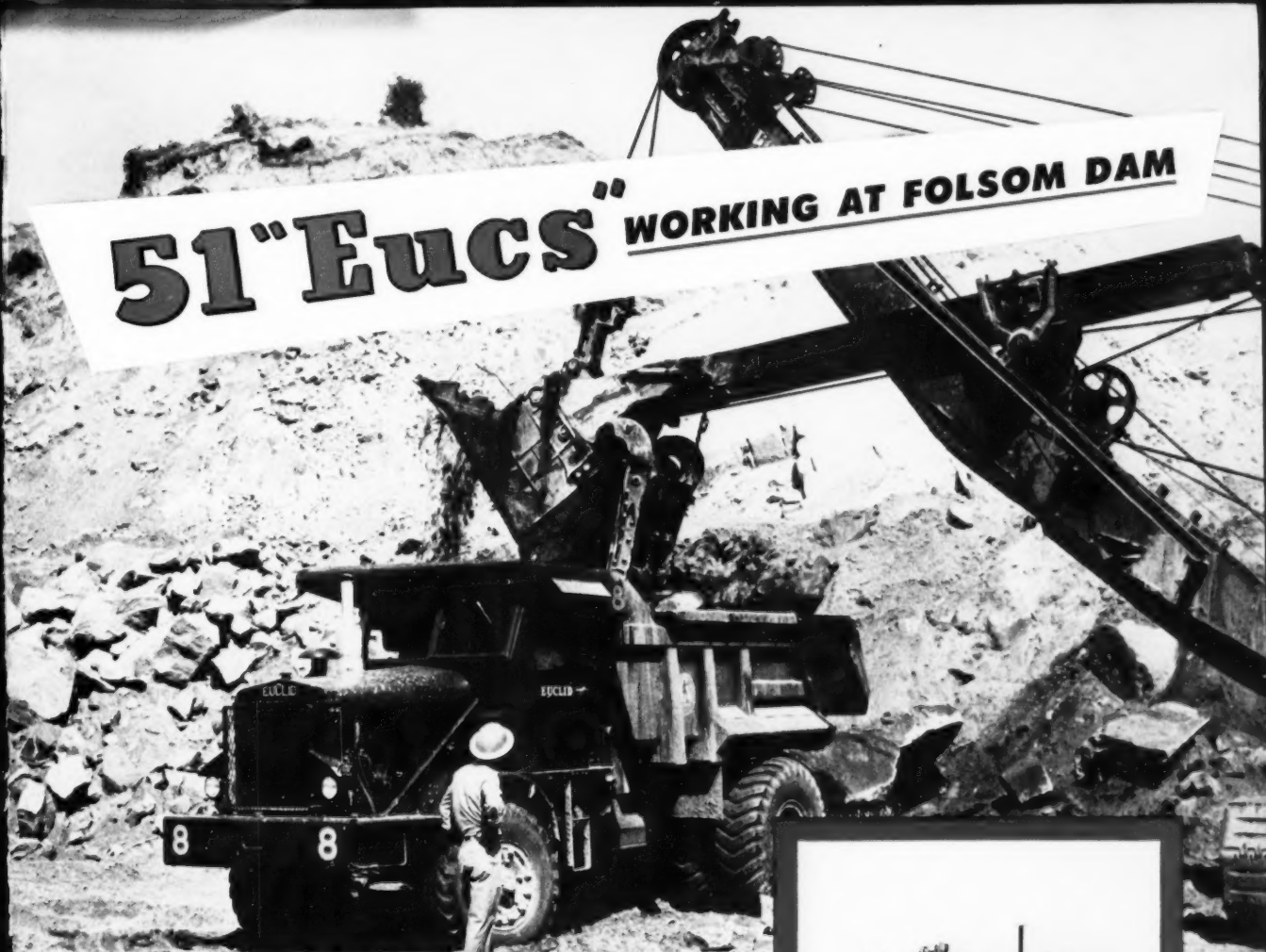
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Mill and General Offices
Everett, Washington

51"Eucls" WORKING AT FOLSOM DAM



Fifteen and a half million cu. yds. of earth and rock are being moved for construction of Folsom Dam on the American River near Sacramento, Cal. This big irrigation, flood control and power project is being built under the supervision of the Corps of Engineers and the U. S. Bureau of Reclamation.

As on hundreds of other tough jobs, Euclid equipment is helping to keep the earth moving work on schedule. Contractors for the dam, Merritt-Chapman & Scott Corporation and Savin Construction Company are using 4 Euclid Twin-Power

Scrapers, 15 Rear-Dump "Eucls" of 22 ton capacity, 16 Bottom-Dumps carrying heaped loads of 30 cu. yds., and a Euclid Loader. Guy F. Atkinson Company is using a total of 15 "Eucls" for power house excavation and building an access road.

The high production and cost cutting features of Euclid equipment can pay off for you just as they are for the contractors at Folsom Dam. Ask your Euclid Distributor for facts and figures... he has a new catalog on the complete line of Euclid equipment for you... just ask for Form 325.

The EUCLID ROAD MACHINERY Co., CLEVELAND 17, OHIO



Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE



there are
TWO WAYS
to build a line
of excavators

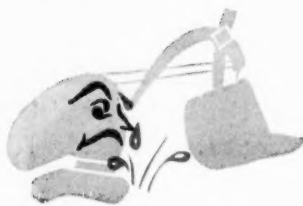


1/THE EASY WAY . . .

. . . is to design a few basic machines, and then build up a line of additional models by adding extra counterweight, speeding up the engine, and hanging different size dippers on each.



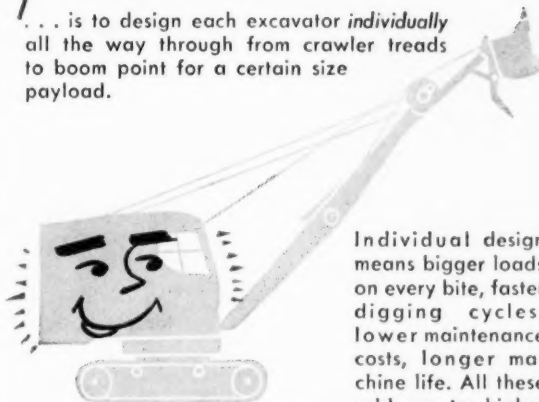
Some of these machines will carry dippers too small. Output will be reduced, power wasted.



Other machines with dippers too large and counterweight too heavy will sweat and strain from overwork.

2/THE BUCYRUS-ERIE WAY

. . . is to design each excavator *individually* all the way through from crawler treads to boom point for a certain size payload.



Individual design means bigger loads on every bite, faster digging cycles, lower maintenance costs, longer machine life. All these add up to higher overall output, lower overall costs. Compare *individually designed* Bucyrus-Eries with excavators in any other line before you buy. Ask your Bucyrus-Erie distributor to give you complete details on how individual design means bigger output for you.

9E53C

**BUCYRUS
ERIE**

SOUTH MILWAUKEE, WISCONSIN

3½- to 4-yd. Gasoline, Diesel,
Single Motor Electric Excavators

HYDROCRANE • HYDROHOE